BIOLOGY

Q.1 **In a newly discovered virus you might fin**
A) DNA
B) RNA
C) DNA or RNA
D) DNA and RNA

Q.2 **Bacteriophage consists of or made up of.**
A) Carbon and nitrogen
B) Proteins
C) Nucleoproteins
D) DNA

Q.3 **AIDS is due to.**
A) Deficiency of T4 lymphocytes
B) Bacterial infection
C) Deficiency of riboflavin
D) High blood pressure

Q.4 **Animal viruses have.**
A) DNA
B) RNA
C) DNA and RNA
D) DNA or RNA

Q.5 **Give below is the diagram of a bacteriophage. In which one of the options all the four parts A, B, C and D are correct.**
A) A-tail fibers B-head ,C-sheath D-collar
B) A – sheath B –collar C -head D -tail fiber
C) A – head B-sheath C – collar D-tail fibers
D) A – collar B-tail fibers C-head D-shea

Q.6 **The genetic material of retroviruses (AIDS virus) is.**
A) Single stranded RNA
B) Double stranded RNA
C) Double stranded DNA
D) Single stranded DNA

Q.7 **The bacteriophage contains an enzyme known as.**
A) Lysozyme
B) Urease
C) Protease
D) Dehydrogenase

Q.8 **A virion is a.**
A) Virus
B) Viral ribosome
C) Viral lysosome
D) Viral gene

Q.9 **Which of the following characteristic of viruses is not like that of living things**
A) crystal formation
B) respiration
C) growth
D) reproduction

Q.10 **Which statement is not true about fungi**
A) absorptive heterotrophs
B) eukaryotic reducers
C) lack cell wall
D) both b and c

Q.11 **The complete mature and infectious particle is known as**
A) pirion
B) virion
C) orf virus
D) both a and c

Q.12 **The latest view for the origin of viruses is.**
A) These have arisen from nucleic acid and protein found in primitive soup
B) These arose from bacteria as a result of the loss of cell wall ribosome etc.
C) These arose from some bacteria, which had developed a nucleus only
D) These are modified plasmids which are in fact the fragments of the nucleic acids of the host

Q.13 **Viroids differ from viruses in having.**
A) Naked RNA molecules only
B) Naked DNA molecules only viral genome
C) Naked DNA packed
D) Satellite RNA packed with viral genome

Q.14 **HIV is classified as a retrovirus because its genetic information is carried in.**
A) DNA instead of RNA
B) DNA
C) RNA instead of DNA
D) Protein coat

Q.15 **Enveloped virus enters into host cells by.**
A) Injecting own nucleic inside host cells
B) By contact with cell receptor and endocytosis
C) By phagocytosis
D) Fusion with the plasma membrane of host

Q.16 **Bacteriophage releases lysozyme during.**
A) Penetration phase
B) Eclipse phase
C) Absorption phase
D) Maturation phase

Q.17 **Viruses are**
A) intracellular parsites
B) facultative parasites
C) obligate parasites
D) both a and c

Q.18 **Common cold is caused by**
A) Adenovirus
B) Rhabdovirus
C) Tubulovirus
D) Polyomavirus

Q.19 **Number of capsomers present in herpes virus are**
A) 161
B) 162
C) 251
D) 252

Q.20 **All viruses are made up of**
A) Proteins
B) Nuclic acid
C) Protein and DNA
D) both a and b

Q.21 **The process which cannot t**
A) Transformation
B) Conjugation

Q.22 **Helical contractile sheath**
A) Bacteria
B) Bacteriophage

Q.23 **Which of the following st**
A) DNA is not present at an
B) Retroviruses carry gene
C) The genetic material in
D) Retroviruses are causat

Q.24 **Which of the following**
A) RNA is genetic materia
B) RNA is genetic materia
C) DNA is genetic materi
D) Some virus has RNA a

Q.25 **Prions are made up of**
A) DNA and carbohydra
B) RNA and Lipids only

Q.26 **Viral disease that is**
A) Polio
B) Hepatitis B

Q.27 **Certain RNA viruses synthesis of DNA. T**
A) Viral nuclease
B) RNA replicase

Q.28 **How is HIV transm**
A) In food
B) Through the air

Q.29 **How does a virus**
A) It releases toxic
B) It destroys heal

Q.30 **How are HIV and**
A) HIV contains R
B) HIV is the viru
C) HIV reproduce
D) AIDS is an op

Q.31 **Why can't a pe**
A) B cells are ne
B) B cells are de
C) HIV mutates
D) T cells are n

Q.32 **Induction is**
A) Enters into
B) Detached f
C) Destroy th
D) Multiply w

Q.33 **When a ba digested ch**
A) Conjugat
B) Transfor

Q.34 **Which on**
A) RNA-en
B) DNA-no

Q.35 **Mumps a viruses:**
A) RNA en
B) DNA n

Q.36 **Which epidemi**
A) Influe
B) Herp

Q.37 **In HIV viral D**
A) Tra
B) Du

Q.21 **The process which cannot take place in the absence of virus is.**
A) Transformation
B) Conjugation
C) Translocation
D) Transduction

Q.22 **Helical contractile sheath occurs in**
A) Bacteria
B) Bacteriophage
C) Retroviruses
D) Fungi

Q.23 **Which of the following statement is not true for retroviruses.**
A) DNA is not present at any stage in the life cycle of retroviruses
B) Retroviruses carry gene for RNA dependent DNA polymerase
C) The genetic material in mature retroviruses is RNA
D) Retroviruses are causative agents for certain kinds of cancer in man

Q.24 **Which of the following statements is correct.**
A) RNA is genetic material of bacteria
B) RNA is genetic material of all virus
C) DNA is genetic material of some organism
D) Some virus has RNA as genetic material

Q.25 **Prions are made up of**
A) DNA and carbohydrate only
B) RNA and Lipids only
C) Protein and Nucleic acid only
D) none a, b and c

Q.26 **Viral disease that is wide spread and caused by enveloped RNA virus is:**
A) Polio
B) Hepatitis B
C) Small pox
D) Influenza

Q.27 **Certain RNA viruses carry a gene for an enzyme that uses viral RNA as a template in the synthesis of DNA. This enzyme is:**
A) Viral nuclease
B) RNA replicase
C) RNA polymerase
D) Reverse transcriptase

Q.28 **How is HIV transmitted from one person to another?**
A) In food
B) Through the air
C) Through body fluids
D) By insect vector

Q.29 **How does a virus cause disease?**
A) It releases toxic chemicals
B) It destroys healthy body cells
C) It takes over the normal activities of a cell
D) It takes a cell's nutrients

Q.30 **How are HIV and AIDS different?**
A) HIV contains RNA; AIDS contains DNA
B) HIV is the virus that causes AIDS, a disease of the immune system
C) HIV reproduces in B cells; AIDS reproduces in T cells
D) AIDS is an opportunistic infection

Q.31 **Why can't a person with AIDS make antibodies against HIV?**
A) B cells are needed to activate T cells, which make antibodies
B) B cells are destroyed by HIV
C) HIV mutates too quickly for the body to make antibodies
D) T cells are needed to activate B cells, which make antibodies

Q.32 **Induction is a process in which a viral DNA**
A) Enters into bacterial cell and attached with bacterial DNA
B) Detached from bacterial DNA
C) Destroy the bacterial DNA
D) Multiply with bacterial DNA

Q.33 **When a bacteriophage in its lytic phase carries some of the bacterium's partially digested chromosome with it to another host cell the process is called:**
A) Conjugation
B) Transformation
C) Transduction
D) None of these

Q.34 **Which one is true for Pox-viruses?**
A) RNA-enveloped
B) DNA-non enveloped
C) DNA-enveloped
D) DNA-naked virion

Q.35 **Mumps and measles viruses belong to group paramyxoviruses which are the ____ viruses:**
A) RNA enveloped
B) DNA naked
C) RNA non-enveloped
D) DNA enveloped

Q.36 **Which one of the following diseases caused by enveloped RNA virus and spread in epidemic form?**
A) Influenza
B) Herpes simplex
C) Polio
D) Small pox

Q.37 **In HIV viruses, reverse transcriptase converts single-stranded RNA into double stranded viral DNA. This process is called:**
A) Translation
B) Duplication
C) Replication
D) Reverse Transcriptase

Q.38 Reverse transcription is used to make DNA copies of:
A) Host RNA
B) Host DNA
C) Viral DNA
D) Viral RNA

Q.39 Which one of the following cells are mainly infected by HIV?
A) T-killer lymphocyte
B) T-helper lymphocyte
C) B-plasma cells
D) B-memory cells

Q.40 What is the sequence of steps in which a bacteriophage attacks bacteria and injects its DNA?
A) Landing → Tail contraction → Penetration → DNA injection
B) Penetration → Landing → Tail contraction → DNA injection
C) Tail contraction → Landing → DNA Injection Penetration
D) Landing → Penetration → Tail contraction → DNA injection

Q.41 HIV is classified as:
A) Bacteriophage
B) Oncovirus
C) Retrovirus
D) Icosahedral virus

Q.42 All viruses can reproduce within living organisms only, so they are known as:
A) Ectoparasites
B) Endoparasites
C) Obligate Intracellular Parasites
D) Facultative Intracellular Parasites

Q.43 Jenner used material for vaccination from cowpox lesions and successfully vaccinated _____ persons:
A) 7
B) 8
C) 23
D) 16

Q.44 _____ was formerly called as infectious hepatitis:
A) Hepatitis A
B) Hepatitis B
C) Hepatitis C
D) Hepatitis E

Q.45 The best known phages are T phages that infect:
A) Pseudomonas
B) Mycoplasmas
C) Escherichia coli
D) Salmonella typhi

Q.46 Viruses are considered nonliving because
A) Do not mutate
B) They do not locomote
C) connot reproduce independently
D) have nucleic

Q.47 Which of these are found in all viruses?
A) envelope, nucleic acid, capsid
B) DNA RNA, and proteins
C) proteins and nucleic acid
D) protein, carbohydrate, lipids t

Q.49 Which step in the lytic cycle follows attachment of virus and release of DNA into the cell?
A) production of lysosome
B) Disintegration of host DNA
C) assemblage
D) DNA replication

Q.49 Which of these is true statement?
A) viruses carry with them their own ribosome for protein formation
B) new viral ribosomes form after viral DNA enters the cell
B) disintegration of host DNA
C) viruses use the host ribosomes for their own needs
D) viruses do not need ribosomes for protein formation

Q.50 Which part of an animal virus is not reproduced in multiple copies?
A) envelope
B) protein
C) capsid
D) ribosome

Q.51 RNA retroviruses have a special enzyme that
A) disintegrates host DNA
B) Polymerises host DNA
C) transcribe viral RNA to DNA
D) translates host DNA

Q.50 Which of the following illness is caused by a retrovirus?
A) typhoid
B) malaria
C) AIDS
D) sleeping sickness

Q.53 The HIV primarily infects
A) plasma cells
B) helper T cells
C) all white blood cells
D) red blood cells

Q.54 Poliomyelitis affects
A) motor neuron
B) sensory neuron
C) brain
D) muscly

Q.55 HIV attaches to
A) CD4 protein
B) nucleoprotein
C) lipoprotein
D) glycoproten

Q.56 Hepatitis D is caused by
A) bacteria
B) virus

1.	C	2.
6.	A	7.
11.	B	12.
16.	A	17.
21.	D	22.
26.	d	27.
31.	b	32.
36.	A	37.
41.	C	42.
46.	C	47.
51.	C	52.
56.	D	57.

Q.56 Hepatitis D is caused by
A) bacteria
B) virus
C) prions
D) viroids

ANSWERS

1.	C	2.	C	3.	A	4.	D	5.	C
6.	A	7.	A	8.	A	9.	A	10.	C
11.	B	12.	D	13.	A	14.	C	15.	D
16.	A	17.	D	18.	A	19.	B	20.	D
21.	D	22.	B	23.	A	24.	D	25.	D
26.	d	27.	d	28.	c	29.	C	30.	B
31.	b	32.	B	33.	C	34.	C	35.	A
36.	A	37.	D	38.	D	39.	B	40.	A
41.	C	42.	C	43.	C	44.	A	45.	C
46.	C	47.	C	48.	B	49.	C	50.	B
51.	C	52.	B	53.	B	54.	A	55.	A
56.	D	57.		58.		59.		60.	

Q.1 One molecule of FADH2 is produced in Kreb's cycle during conversion of:
A) Fumarate → Malate
B) Malate → Oxaloacetate
C) Succinate → Fumarate
D) α-Ketoglutarate → Succinate

Q.2 Which part of chlorophyll molecule absorbs light?
A) Phytol
B) Pyrrole
C) Porphyrin ring
D) Thylakoid membrane

Q.3 A biochemical process which occurs within a cell to breakdown complex compounds to produce energy is called:
A) Respiration
B) Oxidation reduction
C) Photosynthesis
D) Photophosphorylation

Q.4 The end product of anaerobic respiration in humans and other animals is:
A) Pyruvic acid
B) Lactic acid
C) Ethanol
D) Glucose

Q.5 Final acceptor of electrons in respiratory chain is:
A) Cytochrome-A
B) Cytochrome-A_3
C) Oxygen
D) Cytochrome-C

Q.6 Every molecule of NADH, fed into electron transport chain produces:
A) 6 ATP
B) 4 ATP
C) 2 ATP
D) 3 ATP

Q.7 Oxidative phase of glycolysis starts with dehydrogenation of:
A) Glucose
B) Glyceraldehyde3-phosphate
C) Fructose-6-phosphate
D) NADH

Q.8 In one turn, the Krebs's cycle produces one molecule of ATP, one molecule of FADH and molecule of NADH:
A) 1
B) 3
C) 2
D) 4

Q.9 Which one of the following is the stage of cellular respiration for which oxygen is not expended?
A) Glycolysis
B) Kreb's cycle
C) Pyruvate oxidation
D) Oxygen transport chain

Q.10 Pyruvate is the end product of glycolysis, enters from cytosol to mitochondrial matrix, which is oxidized into _____ producing CO_2 as by product:
A) Acetic acid (activB)
B) NAD
C) Citerate
D) FAD

Q.11 Pyruvate →Acytyl CoA:
A) $FAD^+ \rightarrow FADH$
B) $NADH \rightarrow NAD + H^+$
C) $NAD^+ \rightarrow NADH$
D) $FADH \rightarrow FAD + H^+$

Q.12 In light independent stage of photosynthesis, the CO_2 combines with _____ to form an unstable 6-carbon intermediate:
A) Ribulose bisphosphate
B) Glycerate-3-phosphate
C) Hexose sugar
D) Glyceraldehyde-9-phosphate

Q.13 In glycolysis, glycerate-1,3-bispohosphate is converted into glycerate-3-phosphate by losing _____ phosphate molecules:
A) 3
B) 1
C)2
D) 4

Q.14 Malate is oxidized by _____ to oxaloacetate in Kreb's Cycle:
A) ATP
B) NAD
C) NADP
D) FAD

Q.15 In electron transport chain, the electrons from NADH and $FADH_2$ are passed to:
A) Cytochrome a
B) Co-enzyme c
C) Cytochrome a_3
D) Co-enzyme Q

Q.16 Carrier of the respiratory chain are located on:
A) Matrix of mitochondria
B) Inner membrane of mitochondria
C) Outer membrane of mitochondria
D) Cytoplasmic matrix

Q.17 Each _____ consists of a light gathering antenna complex and reaction center:
A) Chlorophyll
B) Photon
C) Photosystem
D) Electron

Q.18 **Photosystem I has chlorophyll a molecules which absorb maximum light of:**
A) 680 nm
B) 700 nm
C) 780 nm
D) 580 nm

Q.19 **Oxidative phosphorylation, synthesis of ATP in the presence of oxygen occurs in all:**
A) Types of cells
B) Primitive cells
C) Anaerobic cells
D) Aerobic cells

Q.20 **Glycolysis is the breakdown of glucose into two molecules of:**
A) Glycerate
B) Pyruvate
C) Lactic acid
D) Succinic acid

Q.21 **Before entering intoKreb's cycle, the pyruvate is first decarboxylated and oxidized into:**
A) Alpha ketoglutaric acid
B) Glyceric acid
C) Citric acid
D) Acetic acid

Q.22 **Some electron from the second primary accepter may pass back to chlorophyll molecules by electron carrier system, yielding ATP this process is called:**
A) Phosphorylation
B) Non-cyclic phosphorylation
C) Photophosphorylation
D) Cyclic phosphorylation

Q.23 **Z-scheme is used for:**
A) Non-cyclic photophosphorylation
B) Cyclic photophosphorylation
C) Both cyclic and non-cyclic photophosphorylation
D) Oxidative phosphorylation

Q.24 **The product(s) of cyclic photophosphorylation is/are:**
A) ATP
B) NADP and ATP
C) NADP
D) NADP, ATP and O_2

Q.25 **Total NADH formed by one glucose molecule during Kreb's Cycle are:**
A) 6
B) 8
C) 3
D) 18

Q.26 **The terminal electron acceptor in electron transport chain is:**
A) Hydrogen
B) Cytochrome
C) Iron
D) Oxygen

Q.27 **The end product of glycolysis is:**
A) ADP
B) Citric acid
C) Reduced FAD
D) Pyruvate

Q.28 **Cyclic flow or C4 photosynthesis produces:**
A) ATP and CO_2
B) Only CO_2
C) ATP
D) Only Oxygen

Q.29 **The chemical formula of pyruvic acid is:**
A) $C_3H_6O_3$
B) $C_3H_4O_3$
C) $C_3H_8O_3$
D) $C_3H_6O_2$

Q.30 **Glycolysis can be divided into two phases, a _____ phase and an oxidative phase:**
A) Reducing
B) Respiratory
C) Preparatory
D) Terminating

Q.31 **_____ on entering the mitochondrion unites with coenzyme-A (CoA) to form acetyl CoA:**
A) Glucose
B) Lactic acid
C) Pyruvic acid
D) Acetic acid

Q.32 **The oxidation reduction substances which take part in respiratory chain are:**
A) Coenzyme Q
B) Molecular oxygen
C) Cytochrome enzymes b,c,a,a_3
D) All the above

Q.33 **Immediate product formed after CO_2 fixation in Calvin Cycle is:**
A) Unstable 6-carbon compound
B) Unstable 4-carbon compound
C) Unstable 5-carbon compound
D) Unstable 3-carbon compound

Q.34 **Functional group of chlorophyll a is:**
A) $-CH_3$
B) -COOH
C) -CHO
D) -OH

Q.35 **The amount of glucose converted into ATP during anaerobic respiration:**
A) 4%
B) 2%
C) 3%
D) 1%

Q.36 In primitive cells and in some eukaryotic cells such as yeast, pyruvic acid is broken down to:
A) C_2H_5OH
B) Lactic acid
C) CO_2
D) Both 'a' & 'b'

Q.37 The complete breakdown of glucose molecule occurs only in the presence of:
A) Mitochondria
B) Water
C) Carbon dioxide
D) Oxygen

Q.38 Cellular respiration is essentially a/an _____ process:
A) Oxidation
B) Both 'a' & 'b'
C) Reduction
D) None of these

Q.39 NADH in respiratory chain is oxidized by:
A) Coenzyme 'Q'
B) $NADP^+$ reductase
C) Cytochrome enzyme 'a'
D) Cytochrome enzyme 'c'

Q.40 During aerobic respiration, $FADH_2$ is produced in:
A) Glycolysis
B) The Krebs cycle
C) The oxidation of pyruvate
D) The electron transport chain

Q.41 The transfer of energy during chemiosmosis:
A) $H^+ \rightarrow e^- \rightarrow ATP$
B) $ATP \rightarrow e^- \rightarrow H^+$
C) $e^- \rightarrow H^+ \rightarrow ATP$
D) $ATP \rightarrow H^+ \rightarrow e^-$

Q.42 Hans Krebs worked out the details of:
A) Glycolysis
B) The oxidation of Pyruvate
C) Fermentation
D) The citric acid cycle

Q.43 The enzyme required for Krebs cycle is found in _____.
A) F1 particle
B) Lysosomes
C) Cytoplasm
D) Matrix

Q.44 _____ is the site of light independent reaction.
A) Thylakoid membrane
B) Stroma
C) Thylakoid space
D) Grans

Q.45 The enzymes required in Glycolysis are present in.
A) Golgi apparatus
B) Inner mitochondrial membrane
C) Cell cytoplasm
D) Matrix of mitochondria

Q.46 At the last step of Glycolysis which of the following compound is formed.
A) pyruvate
B) ethyl alcohol
C) lactic acid
D) Fructose phosphate

Q.47 NADP nicotinamide adenine dinucleotide phosphate is a carrier of .
A)-OH group
B) Hydrogen
C) O_2 group
D) Phosphate

Q.48 In aerobic respiration.
A) Pyruvate is completely oxidized to form carbon dioxide and water
B) Pyruvate is completely oxidized to form oxygen and water
C) Pyruvate carboxylated to prodice citrate
D)pyruvate is convertol to ethanol and carbondioxide

Q.49 When we extract carotenoids from its source we see that it is.
A) Violet in color
B) Yellow green in color
C) Blue green in color
D) Yellow to orange red in color

Q.50 Photosystem – I and photosystem – II are found in.
A) Stroma of chloroplast
B) Matrix of mitochondria
C) Grana of chloroplast
D) Inner membrane of mitochondria

Q.51 Photosynthetic pigments in chloroplast are embedded in the membrane of.
A) Thylakoids
B) Chloroplast envelope
C) Matrix
D) Photoglobin

Q.52 Chlorophyll molecules are g
A) Transform green light
B) Absorb green light

Q.53 Which one of the following
A) Oxidative carboxylation
B) Oxidative Phosphorylation

Q.54 Which of the following is t
A) It is active only upto 680
B) The reaction centre of PS
C)PS-I is reduced by the ele
D)PS-I is involved in non-cy

Q.55 The first stable product o
A)3-phosphoglycerate
B) Glyceraldehyde -3phosp

Q.56 The molecule which mai
photosynthesis are.
A) Chlorophyll
B) Chlorophyll b

Q.57 Photosynthetic bacteri
A) Quantasome
B) PS-II

Q.58 The light reactions of
A) Light energy
B) H_2O and NADPH

Q.59 Number of ATP and N
calvincycleis.
A)3 ATP and 3 $NADPH_2$
B)2ATP and 3$NADPH_2$

Q.60 What is the immedi
A) The electron energ
B) The electron energ
C)The electron energ
D)The electron energ

Q.61 Dark reaction in ph
A) It can also occur
B) Cannot occur dur

Q.62 The main differen
A) Photosystem I is
B) Photosystem I p
C) Photosystem I p
D) Photo system I

Q.63 Photosynthesis
A) Water is reduce
B) Both CO_2 and

Q.64 Which element
A) Iron and calciu
B) Sodium and c

Q.65 Photophospho
A) Formation of
B) Formation of
C)Formation of
D)Formation of

Q.66 Photolysis of
A) PS-I
B) PS-I and PS

Q.67 Cyclic photop
A) PS-II
B) Dark react

Q.52 Chlorophyll molecules are green in colour because they.
A) Transform green light
B) Absorb green light
C) Transmit green light
D) Reflect green light

Q.53 Which one of the following is represented by calvincycle.
A) Oxidative carboxylation
B) Oxidative Phosphorylation
C) Photophorylation
D) Reductive carboxylation

Q.54 Which of the following is the characteristic of PS - I.
A) It is active only upto 680 nm of light
B) The reaction centre of PS - I is p680
C)PS-I is reduced by the electrons released in photolysis of water
D)PS-I is involved in non-cyclic photophosphorylation

Q.55 The first stable product of calvin cycle is.
A)3-phosphoglycerate
B) Glyceraldehyde -3phosphate
C)1,3 biphosphoglycerate
D) Ribulose -5- phosphate

Q.56 The molecule which mainly absorb light energy and convert it to chemical energy in photosynthesis are.
A) Chlorophyll
B) Chlorophyll b
C) Chlorophyll a
D) Xanthophyll

Q.57 Photosynthetic bacteria do not contain.
A) Quantasome
B) PS-II
C) PS-I and PS-II
D) PS-I

Q.58 The light reactions of photosynthesis supply the calvin cycle with.
A) Light energy
B) H_2O and NADPH
C) CO_2 and ATP
D) ATP and NADPH

Q.59 Number of ATP and $NADPH_2$ consumed during the fixation of one CO_2 molecule in calvincycleis.
A)3 ATP and 3 $NADPH_2$
B)2ATP and 3$NADPH_2$
C)3ATP and 2$NADPH_2$
D)18 ATP and 12 $NADPH_2$

Q.60 What is the immediate use of electron energy during the process.
A) The electron energy directly drives the synthesis of ATP
B) The electron energy builds a proton gradient across the Thylakoid membrane
C)The electron energy builds a proton gradient across the inner chloroplast membrane
D)The electron energy directly drives the synthesis of NADPH

Q.61 Dark reaction in photosynthesis is so called because.
A) It can also occur in dark
B) Cannot occur during daytime
C) It does not require light energy
D) Occures more rapidly at night

Q.62 The main difference in two light reactions of photosynthesis is.
A) Photosystem I is a strong reducant and photosystem II a strong oxidant
B) Photosystem I produces a strong oxidant and photosystem II a strong reducant
C) Photosystem I produces ATP while photosystem II does not produce ATP
D) Photo system I emit electrons to be transferred to photosystem II

Q.63 Photosynthesis an oxidation reduction process in which.
A) Water is reduced and CO_2 is oxidize
B) Both CO_2 and water are oxidized
C) Water is oxidized and CO_2 is reduced
D) Both CO_2 and water are reduced

Q.64 Which elements are required for the synthesis of chlorophyll molecules.
A) Iron and calcium
B) Sodium and copper
C) Iron and magnesium
D) Calcium and potassium

Q.65 Photophosphorylation means.
A) Formation of ATP from ADP in presence of light
B) Formation of NADP
C)Formation of ADP from ATP
D)Formation of PGA

Q.66 Photolysis of water is caused by.
A) PS-I
B) PS-I and PS-II
C) PS-II
D) None

Q.67 Cyclic photophosphorylation links to.
A) PS-II
B) Dark reaction
C) PS-I
D) Both a and b

Q.68 During calvin cycle the total number of CO_2 ATP and NADPH molecules utilized and glucose ADP and NADP generated is.
A)31
B)61
C)36
D)67

Q.69 Cyclic photophosphorylation links to.
A) PS-II
B) Dark reaction
C) PS-I
D) Both a and b

Q.70 In C_3 cycle for the fixation of every CO_2molecules the reduction and regeneration steps required.
A)3 ATP and 2 $NADPH_2$
B)2ATP and 3 $NADPH_2$
C)2 ATP and 2 $NADPH_2$
D)3 ATP and 3 $NADPH_2$

Q.71 Which of the following is true for photosynthesis?
A) Reduction of CO_2 and water
B) Oxidation of CO_2 and water
C)Reduction of CO_2 and oxidation of water
D)Oxidation of CO_2 and reduction of water

Q.72 The fate of protons pumped across the membrane is:
A) Photo oxidation
B) Substrate level phosphorylation
C) Photophpsphorylation
D) Oxidative phosphorylation

Q.73 Aerobic respiratory pathway is appropriate termed:
A) Unstrained muscle cells
B) Red blood cells
C) Liver cells
D) White blood cells

Q.74 In the Krebs cycle the FAD electrons transport system operates during the conversion of
A) Succinyl CoA to succinic acid
B) Succinic acid to fumaric acid
C) α-Ketoglutarate to succinyl CoA
D) Fumaric acid to malic acid

Q.75 Which of the following is the connecting link between glucolysis and Krebs cycle:
A) Acetyl Co-A
B) Pyruvic acid
C) Oxalosuccinic acid
D) Citric acid

Q.76 Respiration is a:
A) Exothermic process
B) Anabolic process
C) Endothermic process
D) All the above

Q.77 The enzyme decarboxylase catalysis the following steps:
A) Conversion of citric acid to cis aconitic acid
B) Fumaric acid to malic acid
C) Oxalosuccinic acid toα-ketoglutaric acid
D) Malic acid to oxaloacetic acid

Q.78 Glycolysis is found in cytoplasm of virtually all types of aerobic and anaerobic cells. In this process, glucose is converted into a compound which is:
A) PEP
B) Pyruvic acid
C) Acetyl CoA
D) Citric acid

Q.79 The enzymes, which take part in glycolysis are found in:
A) Mitochondria
B) Mitochondria & cytoplasm
C) Cytoplasm
D) Vacuoles

Q.80 Anaerobic process after glycolysis is called as:
A) TCA cycle
B) Krebs cycle
C) Calvin cycle
D) none of these

Q.81 The end product of cytoplasmic respiration is:
A) Ethyl Alcohol
B) Citric acid
C) Pyruvic acid
D) Phosphoglyceric acid

Q.82 Which of the metabolites is common to respiration meditated breakdown of fats, carbohydrates and proteins?
A) Acetyl Co-A
B) Fructose1, 6-biphosphate
C) Glucose-6-Phosphate
D) Pyruvic acid

Q.83 In which of the following reactions of glycolysis, oxidation take place:
A) Glucose 6-PO_4 to fructose 6-PO_4
B) Glyceraldehyde 3-phosphate to 1, 3-diphosphoglycerate
C) 1-3 diphosphoglycerate to 3-phosphoglycerate
D) 2-phosphoglycerate to phosphoglycerate

Q.84 Anaerobic respiration is also
A) β-oxidation
B) Oxidation

Q.85 FAD acts as an electron acc
A) Fumaric and malic acid
B) Malic acid and oxaloacetic a

Q.86 Krebs cycle take place in:
A) Cytoplasm
B) Nucleus

Q.87 The formation of Acetyl Co
A) Reduction
B) Dephosphorylation

Q.88 Krebs cycle begins with:
A) Pyruvic acid
B) Lysine

Q.89 The reaction of Krebs cy
A) In the cytoplasm
B) On the surface of mitoc

Q.90 Chlorophyll "b" is differ
A) -CHO
B) CH_3

Q.91 The most abundant ph
A) Chlorophyll 'a'
B) Chlorophyll 'c'

Q.92 Chlorophyll "a" itself i
A) Blue absorption peaks
B) Green absorption pea

Q.93 Which one of the follo
A) Chlorophyll 'a'
B) Chlorophyll 'b'

Q.94 In the photosyntheti
A) Carotenoids → Chlo
B) Chlorophyll 'a' → Ch
C) Chlorophyll 'a' → C
D) Carotenoids → Chl

Q.95 NADPH and ATP, fo
A) Assimilating and r
B) Reducing and assi
C) Oxidizing and red
D) Reducing and oxi

Q.96 What is wrong abo
A) It only takes plac
B) It is independent

Q.97 CO_2 and water du
A) React with each
B) Is reduced and

Q.98 Photolysis is the
A) Light
B) Oxygen

Q.99 Dark reaction of
A) C4 cycle
B) Light depende

Q.84 **Anaerobic respiration is also called as:**
A) β-oxidation
B) Oxidation
C) Fermentation
D) None of these

Q.85 **FAD acts as an electron acceptor in between:**
A) Fumaric and malic acid
B) Malic acid and oxaloacetic acid
C) Succinic acid and Fumaric acid
D) Citric acid and isocitric acid

Q.86 **Krebs cycle take place in:**
A) Cytoplasm
B) Nucleus
C) Chloroplast
D) Mitochondria

Q.87 **The formation of Acetyl Co-A from pyruvic acid is the result of its:**
A) Reduction
B) Dephosphorylation
C) Dehydration
D) Oxidative decarboxylation

Q.88 **Krebs cycle begins with:**
A) Pyruvic acid
B) Lysine
C) HCL
D) Corticosteroids

Q.89 **The reaction of Krebs cycle takes place:**
A) In the cytoplasm
B) On the surface of mitochondria
C) In Endoplasmic reticulum
D) In matrix of mitochondria

Q.90 **Chlorophyll "b" is different from chlorophyll 'a' having _____ group:**
A) -CHO
B) CH_3
C) -COOH
D) CH_2OH

Q.91 **The most abundant photosynthetic pigment found in plants is:**
A) Chlorophyll 'a'
B) Chlorophyll 'c'
C) Chlorophyll 'b'
D) Chlorophyll 'd'

Q.92 **Chlorophyll "a" itself is found in several forms differing slightly in their:**
A) Blue absorption peaks
B) Green absorption peaks
C) Red absorption peaks
D) Yellow absorption peaks

Q.93 **Which one of the following is an example of accessory pigments?**
A) Chlorophyll 'a'
B) Chlorophyll 'b'
C) Carotenoids
D) Both 'b' & 'c'

Q.94 **In the photosynthetic pigments, the flow of energy is:**
A) Carotenoids → Chlorophyll 'b' → Chlorophyll 'a'
B) Chlorophyll 'a' → Chlorophyll 'b' → Carotenoids
C) Chlorophyll 'a' → Carotenoids → Chlorophyll 'b'
D) Carotenoids → Chlorophyll 'a' → Chlorophyll 'b'

Q.95 **NADPH and ATP, formed during light reaction of photosynthesis have:**
A) Assimilating and reducing power respectively
B) Reducing and assimilating power respectively
C) Oxidizing and reducing power respectively
D) Reducing and oxidizing power respectively

Q.96 **What is wrong about dark reaction of photosynthesis?**
A) It only takes place in dark
B) It is independent from light reaction
C) It utilizes the light directly
D) All of these

Q.97 **CO_2 and water during photosynthesis:**
A) React with each other
B) Is reduced and oxidized, respectively
C) Show their action at same time
D) None of these

Q.98 **Photolysis is the splitting of water in the presence of:**
A) Light
B) Oxygen
C) Enzymes
D) Both 'a' & 'b'

Q.99 **Dark reaction of photosynthesis is also called as:**
A) C4 cycle
B) Light dependent reaction
C) Calvin cycle
D) All of these

Q.100 Unidirectional flow of e⁻ in non-cyclic photophosphorylation is:

A) PS II $\xrightarrow{e^-}$ PS I $\xrightarrow{e^-}$ NADP $\xrightarrow{e^-}$ water

B) Water $\xrightarrow{e^-}$ PSII $\xrightarrow{e^-}$ PS I $\xrightarrow{e^-}$ NADP

C) PS I $\xrightarrow{e^-}$ NADP $\xrightarrow{e^-}$ water $\xrightarrow{e^-}$ PS II

D) Water $\xrightarrow{e^-}$ PS I $\xrightarrow{e^-}$ PS II $\xrightarrow{e^-}$ NADP

Q.101 The head and tail of chlorophyll are made up of _____ respectively:

A) Pyrrole & Tetrapyrrole
B) Porphyrin & Phytol
C) Porphyrin & Phytin
D) Tetrapyrrole & Magnesium

Q.102 Which of the following connect the primary and secondary processes of photosynthesis

A) $NADPH_2$
B) ATP
C) ATP & NADPH
D) Ferridoxins

Q.103 For synthesis of one molecule of glucose, the requirement of ATP and NADPH is respectively:

A) 15 and 10
B) 30 and 15
C) 12 and 8
D) 18 and 12

Q.104 In non-cyclic photophosphorylation, the electron emitted by P_{680} is replaced by electron from:

A) NADP
B) Ferredoxin
C) Water
D) Chlorophyll-a

Q.105 Number of steps involved in release of CO_2 during Krebs cycle are:

A) 1
B) 6
C) 2
D) 12

Q.106 Number of carbon atoms present in citric acid, oxaloacetic acid and pyruvic acid are respectively:

A) 6, 3 & 3
B) 5, 4 & 3
C) 6, 4 & 3
D) 6, 4 & 2

Q.107 Aerobic respiration of one glucose produces:

A) 12 NADH + $2FADH_2$ + 38 ATP
B) 8 NADH + $2FADH_2$ + 2ATP
C) 12 NADH + 30 ATP + H2O
D) 10 NADH + 2 $FADH_2$ + 2 ATP + 2 GTP

Q.108 When a pair of electron from NADH is transported through respiration ETC, it results in the formation of _____ molecules of ATP:

A) 5
B) 3
C) 4
D) 2

Q.109 Enzymes taking part in glycolysis are present in:

A) Vacuole
B) Cytoplasm
C) Mitochondria
D) Cytosol

Q.110 Number of ATPs obtained from 1 GTP during one Kreb's cycle is:

A) 1
B) 3
C) 2
D) 6

Q.111 Number of oxygen molecules required for glycolytic breakdown of one glucose molecule is:

A) Three
B) Thirty-eight
C) Zero
D) Six

Q.112 The number of molecules of pyruvic acid formed from one molecule of glucose at the end of glycolysis is:

A) 1
B) 3
C) 2
D) 4

Q.113 As compared to anaerobic respiration the energy gained during aerobic respiration is _____ more:

A) 6 times
B) 18 times
C) 12 times
D) 36 times

Q.114 During respiration, terminal oxidation means:

A) Electron transport
B) Formation of water
C) Synthesis of ATP
D) Dehydrogenation of reaction

Q.115 In ETC, cytochromes are arranged
A) Cytochrome a → Cytochrome a;→
B) Cytochrome b → Cytochrome a;→
C) Cytochrome b → Cytochrome c →
D) Cytochrome b → Cytochrome a;→

Q.116 In oxidative phosphorylation, ox
A) Zero
B) Three

Q.117 End product of citric acid/Kreb
A) Citric acid
B) Pyruvic acid

Q.118 Fructose-6-phosphate is chan
A) Phosphoglycerate
B) Phosphofructo kinase

Q.119 How may ATP will be produc one molecule of pyruvic acid
A) 3 ATP
B) 8 ATP

Q.120 Largest amount of phosph during:
A) Glycolysis
B) Anerobic respiration

Q.121 Number of ATP molecules
A) 6
B) 15

Q.122 Number of carbon atoms
A) 6
B) 3

Q.123 Oxidation of pyruvate to
A) Citric acid cycle
B) Krebs cycle

Q.124 Oxidative phosphorylati
A) $NADPH_2$ in respiration
B) $NADPH_2$ in photosynthe

Q.125 The energy yield as a respiration is sufficien
A) 30 molecules of ADP
B) 32 molecules of ADP
C) 36 molecules of ADP
D) 38 molecules of ADP

Q.126 The enzyme which co
A) Phosphorylase
B) Hexokinase

Q.127 The terminal cytoch
A) Cytochrome b
B) Cytochrome a

Q.128 Removal of the sou changes in the Cond correct combination

	ATP
A	decreases
B	decreases
C	increases
D	increases

Q.115 In ETC, cytochromes are arranged in series of:
A) Cytochrome a → Cytochrome a_3→ Cytochrome b → Cytochrome c
B) Cytochrome b → Cytochrome a_3→ Cytochrome a → Cytochrome c
C) Cytochrome b → Cytochrome c → Cytochrome a → Cytochrome a_3
D) Cytochrome b → Cytochrome a_3→ Cytochrome a → Cytochrome c

Q.116 In oxidative phosphorylation, one molecule of reduced FAD produces, how many ATP?
A) Zero
B) Three
C) Two
D) Four

Q.117 End product of citric acid/Krebs cycle is:
A) Citric acid
B) Pyruvic acid
C) Lactic acid
D) CO_2

Q.118 Fructose-6-phosphate is changed to fructose-1,6-bisphosphate by:
A) Phosphoglycerate
B) Phosphofructo kinase
C) Phosphatase
D) Enolase

Q.119 How may ATP will be produced during the production of one molecule of acetyl-CoA from one molecule of pyruvic acid?
A) 3 ATP
B) 8 ATP
C) 5 ATP
D) 38 ATP

Q.120 Largest amount of phosphate bond energy is produced in the process of respiration during:
A) Glycolysis
B) Anerobic respiration
C) Krebs cycle
D) None of the above

Q.121 Number of ATP molecules which can be built on complete oxidation of pyruvic acid is:
A) 6
B) 15
C) 2
D) 30

Q.122 Number of carbon atoms available in acetyl-CoA is:
A) 6
B) 3
C) 4
D) 2

Q.123 Oxidation of pyruvate to CO_2 and H_2O occurs through:
A) Citric acid cycle
B) Krebs cycle
C) Tricarboxylic cycle
D) All the above

Q.124 Oxidative phosphorylation is the formation of:
A) $NADPH_2$ in respiration
B) $NADPH_2$ in photosynthesis
C) ATP in respiration
D) ATP in photosynthesis

Q.125 The energy yield as a result of total oxidation of one molecule of glucose during cellular respiration is sufficient to convert:
A) 30 molecules of ADP to 30 molecules of ATP
B) 32 molecules of ADP to 32 molecules of ATP
C) 36 molecules of ADP to 36 molecules of ATP
D) 38 molecules of ADP to 38 molecules of ATP

Q.126 The enzyme which converts glucose to glucose-6-phosphate is:
A) Phosphorylase
B) Hexokinase
C) Glucose-6-phosphatase
D) Glucose synthetase

Q.127 The terminal cytochrome in respiratory chain is:
A) Cytochrome b
B) Cytochrome a
C) Cytochrome a_3
D) Cytochrome c

Q.128 Removal of the source of carbon dioxide from photosynthesizing chloroplasts results in rapid changes in the Concentration of certain chemicals. Which one of the following represents the correct combination concentration change?

	ATP	Ribulose bisphosphate	Phosphoglycerate Acid (PGA)
A	decreases	decreases	increases
B	decreases	increases	no change
C	increases	increases	decreases
D	increases	no change	decreases

Q.129 What are the products of the light reactions in photosynthesis?

A) ATP and NADP
B) ATP, PGA and $NADH_2$
C) ATP, PGA and $NADH_2$ TP, $NADPH_2$.
D) ATP, PGA and oxygen

Q.130 During the light dependent stage of photosynthesis, the photoactivated pigment removes an electron from the by derived from the hydroxylation derived from water molecule.the fate of the free hydroxyl radical is that it.

A) is broken down into oxygen and a free radical of hydrogen
B) is used to raise the activation level of chlorophyll by donating a Positive charge
C) is used to produce adenosine triphosphate from adenosine diphosphate
D) reduces carbon dioxide to sugar

Q.131 Carbon dioxide labeled with 14C has been used to identify the intermediate compounds in the Calvin cycle, the light-independent stagel photosynthesis. Which compound would be the first to contain 14C

A) glucose
B) PGA
C) RuBP
D) Starch

Q.132 The rate of photosynthesis of a freshwater plant is measured using five spectral colors. Which sequence of colors would give an increasing photosynthetic response?

Smallest → Longest response					
A	Blue	Green	Yellow	Orange	Red
B	Green	Yellow	Orange	Red	Blue
C	Red	Orange	Yellow	Green	Blue
D	Yellow	Green	Orange	Blue	Red

Q.133 During dark reactions the three carbon atoms of 3-PGA are derived from?

A) RuBP only
B) CO_2
C) RuBP + CO_2
D) RuBP + CO_2 +PEP

Q.134 Chlorophyll is soluble in

A) water
B) organic solvent
C) water and organic solvent
D) Not in any solvent

Q.135 Photorespiration takes place only in

A) root
B) Mitochondria
C) green parts of the plant
D) all cells of the plant

Q.136 In C_4 plants, fixation of CO_2 occurs in

A) palisade tissue
B) cortex of stem
C) spongy mesophyll and bundle of sheath
D) phloem tissue

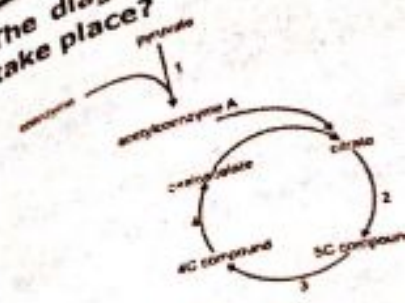
Q.137 ATP synthesis during light reactions is

A) oxidative
B) photolysis
C) substrate phosphorylation
D) photophosphoryation

Q.138 In C_3 plants first stable product of photosynthesis during dark reaction is

A) PGA
B) G3P
C) RuBP
D) oxaloacetate

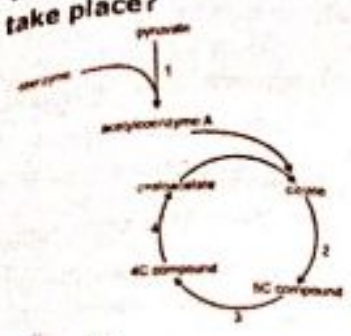
Q.139 The diagram shows the K… take place?



A) 1 and 2
B) 1, 2 and 3

1.	C	2.	C
9.	A	10.	A
17.	C	18.	B
25.	A	26.	D
33.	A	34.	A
41.	C	42.	D
49.	D	50.	C
57.	B	58.	D
65.	A	66.	C
73.	C	74.	B
81.	C	82.	
89.	D	90.	
97.	B	98.	
105.	C	106.	
113.	B	114.	
121.	B	122.	
129.	A	130.	
137.	B	138	

Q.139 The diagram shows the Krebs cycle. At which numbered stages does decarboxylation take place?



A) 1 and 2
B) 1, 2 and 3
C) 1,3 and 4
D) 1,2,3 and 4

ANSWERS

1.	C	2.	C	3.	A	4.	B	5.	C	6.	D	7.	B	8.	B
9.	A	10.	A	11.	C	12.	A	13.	B	14.	B	15.	D	16.	B
17.	C	18.	B	19.	D	20.	B	21.	D	22.	D	23.	A	24.	A
25.	A	26.	D	27.	D	28.	C	29.	B	30.	C	31.	D	32.	D
33.	A	34.	A	35.	B	36.	D	37.	D	38.	A	39.	A	40.	B
41.	C	42.	D	43.	D	44.	B	45.	C	46.	A	47.	B	48.	A
49.	D	50.	C	51.	A	52.	D	53.	D	54.	C	55.	A	56.	C
57.	B	58.	D	59.	C	60.	B	61.	C	62.	A	63.	C	64.	C
65.	A	66.	C	67.	C	68.	D	69.	C	70.	A	71.	C	72.	D
73.	C	74.	B	75.	A	76.	A	77.	C	78.	B	79.	C	80.	D
81.	C	82.	A	83.	B	84.	C	85.	C	86.	A	87.	D	88.	A
89.	D	90.	A	91.	A	92.	C	93.	D	94.	A	95.	B	96.	D
97.	B	98.	D	99.	C	100.	B	101.	B	102.	C	103.	D	104.	C
105.	C	106.	C	107.	D	108.	B	109.	D	110.	A	111.	C	112.	C
113.	B	114.	B	115.	C	116.	C	117.	D	118.	B	119.	A	120.	C
121.	B	122.	D	123.	D	124.	C	125.	C	126.	B	127.	C	128.	B
129.	A	130.	B	131.	B	132.	C	133.	C	134.	C	135.	C	136.	D
137.	B	138.	A	139.		140.		141.		142.		143.		144.	

Q.1 A student of chemical engineering mistakenly engulfed the toxic compound A which was a potent inhibitor of certain enzyme He was immediately brought to hospital where Dr. injected intravenously substrate B to minimize the toxic effect of compound A. His life was saved from serious damages. The treatment method shows that compound A was a _____ inhibitor.
A) Non-competitive reversible
B) Temperature sensitive
C) Irreversible
D) Competitive reversible

Q.2 If molecule can bind to another site of the enzyme rather than the true active site it is referred as....
A) Competitive inhibitors
B) Noncompetitive inhibitors
C) Allosteric inhibition
D) Irreversible inhibitors

Q.3 A non-protein part essential for proper and essential functioning of enzyme is called.
A) Additional factor
B) Efficient co factor
C) Co factor
D) Extra factor

Q.4 The temperature that promotes the maximum activity of enzyme is referred as....
A) Fixed temperature
B) Controlled temperature
C) Optimum temperature
D) Active temperature

Q.5 The covalent bond formed between two monosaccharides is called:
A) Glycosidic bond
B) Peptide bond
C) Hydrogen bond
D) Disulphide bond

Q.6 The bond formed between glucose and fructose to form sucrose is _____ linkage:
A) 1,4 glycosidic
B) 1,6 glycosidic
C) 1,2 glycosidic
D) 1,3 glycosidic

Q.7 Carbohydrates are organic molecules and contain three elements:
A) Carbon, water and oxygen
B) Carbon, calcium and hydrogen
C) Carbon, sulphur and hydrogen
D) Carbon, hydrogen and oxygen

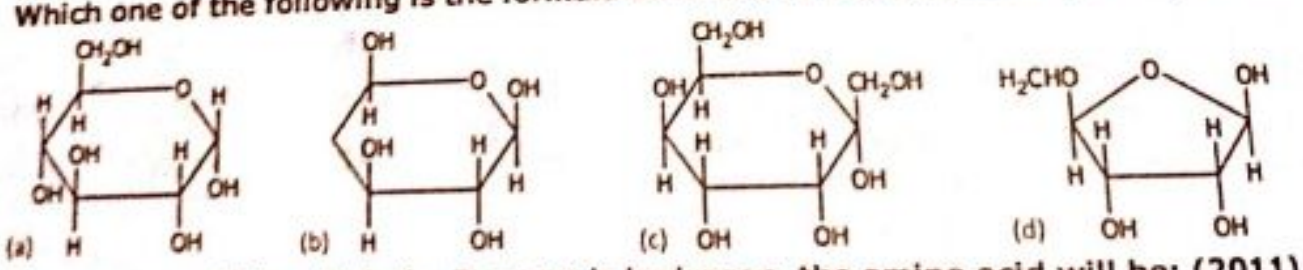
Q.8 Which one are intermediates in respiration and photosynthesis both?
A) Ribose and heptolose
B) Glucose and galactose
C) Glyceraldehydes and dihydroxyacetone
D) Fructose and ribulose

Q.9 _____ is the most abundant carbohydrate in nature:
A) Cellulose
B) Glycerin
C) Waxes
D) Starch

Q.10 Which of the following is a keto sugar?
A) Glyceraldehyde
B) Dihydroxyacetone
C) Ribose
D) Glucose

Q.11 The compounds which on hydrolysis yield polyhydroxy aldehyde or ketone subunits are:
A) Lipids
B) Polynucleotides
C) Proteins
D) Carbohydrates

Q.12 Which one of the following is the formula structure of D (α) glucose? (2016) Answer: A



Q.13 In an amino acid in which the R-group is hydrogen, the amino acid will be: (2011)
A) Alanine
B) Leucine
C) Glycine
D) Valine

Q.14 Cellulose of wood, cotton and paper is an example of:
A) Carbohydrates
B) Proteins
C) Nucleic acids
D) Lipids

Q.15 The main constituents of cell walls in plants, algae, fungi and eukaryotic microorganisms are:
A) Carbohydrates
B) Lipids
C) Proteins
D) Nucleic acids

Q.16 Carbohydrates are composed of:
A) Carbon, Nitrogen and Oxygen
B) Carbon, Hydrogen, Oxygen and Phosphorus
C) Carbon, Hydrogen, Oxygen and Nitrogen
D) Carbon, Hydrogen and Oxygen

Q.17 In simple carbohydrates the ratio of hydrogen and oxygen is the same as in:
A) Lipids
B) Proteins
C) Water
D) Nucleic acids

Q.18 The most common respiratory substance as a source of energy is:
A) Glucose
B) Fructose
C) Sucrose
D) Insulin

Q.19 The simplest monosaccharide containing keto group is:
A) Glyceraldehyde
B) Glucose
C) Dihydroxyacetone
D) Ribose

Q.20 Monosaccharides are major components of:
A) DNA, ATP, Ribulose bisphosphate and cysteine
B) DNA, NAD and Insulin
C) DNA, NADP, ATP and ribulose bisphosphate
D) DNA, RNA and myosin

Q.21 D. Watson and Francis Crick built the _____model of DNA
A) Basic
B) Scale
C) X-ray diffraction
D) None of these

Q.22 Nonsense codons is recognized by the.
A) Initiation factor
B) Release factor
C) rRNA
D) Amino acid

Q.23 Amino acids are arranged according to the information present on:
A) mRNA
B) tRNA
C) rRNA
D) cDNA

Q.24 Chain length of rRNA molecule is_____nucieotides
A) 40-50
B) 75-90
C) 1000
D) 10-50

Q.25 On hydrolysis , oligosaccharides yield_____monosaccharides.
A) 3-7
B) 2-10
C) 1-10
D) More than 10

Q.26 Coiling of DNA strands is:
A) Parallel
B) Analogous
C) Anti parallel
D) Both b & c

Q.27 Which of the following is a disaccharide?
A) Glucose
B) Sucrose
C) Fructose
D) Galactose

Q.28 Glycogen resembles to which of the following?
A) Starch
B) Amylose starches
C) Amylopectin starches
D) None of these

Q.29 The general formula of carbohydrates is Cx (H20) y where 'x' is the whole number:
A) From three to many thousands
B) From three to seven thousands
C) From three to three thousands
D) From seven to many thousands

Q.30 Polyhydroxy aldehydes or ketones are:
A) Carbohydrates
B) Proteins
C) Lipids
D) Nucleic acids

Q.31 The example of polyhydroxy ketone is:
A) Glucose
B) Glyceraldehyde
C) Dihydroxyacetone
D) Ribose

Q.32 "Complex substances which on hydrolysis yield polyhydroxy aldehyde or ketone subunits" are:
A) Monosaccharaides and oligosaccharides
B) Monosaccharaides and polysaccharides
C) Glucose and fructose
D) Oligosaccharides and polysaccharides

Q.33 The sources of carbohydrates are:
A) Bacteria
B) Green plants
C) Protists
D) Protozoans

Q.34 Which of the following is an unsaturated fatty acid?
A) Acetic Acid
B) Oleic acid
C) Butyric acid
D) Palmitic acid

Q.35 Acylglycerols like fats and oils are esters formed by condensation reaction between:
A) Fatty acids and water
B) Fatty acids and alcohol
C) Fatty acids and glucose
D) Fatty acids and phosphates

Q.36 Waterproof surfaces like cuticle of leaf and protective covering of an insect's body are:
A) Phospholipids
B) Terpenoids
C) Waxes
D) Acylyglyceroids

Q.37 Which one of the following is an example or unsaturated fatty acid?
A) Butyric add
B) Palmitic acid
C) Oleic acid
D) Acetic add

Q.38 The general formula of monosaccharides is:
A) $(CH_2O)_n$
B) C. (H20).
C) C,,(H20)y
D) Cy(H20).

Q.39 _____and _____are most common monosaccharides.
A) Trioses, tetroses
B) Tetroses, pentoses
C) Pentoses, hexoses
D) Hexoses, heproses

Q.40 It is an aldo-hexose:
A) Fructose
B) Glucose
C) Ribulose
D) Ribose

Q.41 Most of the monosaccharides form a when in solution.
A) Straight chain
B) Branched chain
C) Ring structure
D) Folded structure

Q.42 Ribose forms a:
A) Three cornered ring
B) Four cornered ring
C) Six cornered ring
D) Five cornered ring

Q.43 Glucose forms a six cornered ring called:
A) Glucopyranose
B) Fructofuranose
C) Ribofuranose
D) Deoxyribo furanose

Q.44 _____corners of ribofuranoseare occupied by carbon.
A) Three
B) Six
C) Four
D) Five

Q.45 _____corners of Glycopyranose are occupied by carbon atoms.
A) Three
B) Four
C) Five
D) Six

Q.46 In free state, glucose is present in:
A) Grapes
B) Figs
C) Dates
D) All fruits

Q.47 In combined form glucose is found in:
A) Many disaccharides & Polysaccharides
B) All oligosaccharides & Polysaccharide
C) All disaccharides & Polysaccharides
D) All trisaccharides& Polysaccharides

Q.48 Starch, cellulose and glycogen yield on complete hydrolysis:
A) Fructose
B) Mannose
C) Glucose
D) Galactose

Q.49 Glucose is naturally produced in:
A) Green plants
B) Protists
C) Animals
D) Fungi

Q.50 the chemical energy stored in 10 gram of glucose is:
A) 7170.6 Kcal
B) 7017.6 Kcal
C) 717.6 Kcal
D) 7107.6 Kcal

Q.51 These are comparatively less sweet in taste and less soluble in water:
A) Monosaccharides
B) Oligosaccharides
C) Disaccharides
D) Polysaccharides

Q.52 Waxes are formed by combination of fatty acids with:
A) Alcohol
B) Serine
C) Glycerol
D) Cysteine

Q.53 The combination of a pentose
A) Nucleotide
B) Nucleic acid

Q.54 One of the pyrimidine bases
A) Uracil
B) Cytosine

Q.55 Which of the following comb
A) A –T
B) A –U

Q.56 Which of the following is a
A) Cytosine
B) Uracil

Q.57 Number of base pairs in or
A) 10
B) 34

Q.58 Phosphodiester bond is:
A) P-O-C-P-O-C
B) C-O-P-O-C

Q.59 An enzyme and substra
known as:
A) Building site
B) Catalyst site

Q.60 The non-protein part of
A) Prosthetic group
B) Co-enzyme

Q.61 Enzymes increase the
A) Increasing temperatur
B) Decreasing activation

Q.62 The type of inhibition
combines with enzym
A) Irreversible inhibition
B) Non-competitive and

Q.63 Solubility of fatty aci
increase in the:
A) Number of carbon a
B) Number of oxygen

Q.64 _____is mu
A) Acetic acid, butyric
B) Bytyric acid, palmi

Q.65 Melting point of pal
A) 61.3°C
B) 63.1°C

Q.66 Melting point of bu
A) 61.3°C
B) 63.1°C

Q.67 The smallest fatty
A) Oleic acid
B) Palmitic acid

Q.68 A saturated fatty
A) Oleic acid
B) Palmitic acid

Q.69 A saturated fatty
A) Acetic acid
B) Butyric acid

Q.70 Fats containing
A) Saturated
B) Unsaturated

Q.53 The combination of a pentose sugar with a base result in a compound known as:
A) Nucleotide
B) Nucleic acid
C) Nucleoside
D) Polynucleotide

Q.54 One of the pyrimidine bases is absent in DNA:
A) Uracil
B) Cytosine
C) Thymine
D) Adenine

Q.55 Which of the following combination of base pair is absent in DNA?
A) A –T
B) A –U
C) C –G
D) T –A

Q.56 Which of the following is a purine?
A) Cytosine
B) Uracil
C) Thymine
D) Guanine

Q.57 Number of base pairs in one turn of DNA is:
A) 10
B) 34
C) 2
D) 54

Q.58 Phosphodiester bond is:
A) P-O-C-P-O-C
B) C-O-P-O-C
C) C-O-P
D) C-C-O-P

Q.59 An enzyme and substrate reacts through a special feature or site present in enzyme known as:
A) Building site
B) Catalyst site
C) Active site
D) Inhibition site

Q.60 The non-protein part of enzyme which is covalently and permanently bonded is called:
A) Prosthetic group
B) Co-enzyme
C) Co-factor
D) Activator

Q.61 Enzymes increase the rate of reaction by:
A) Increasing temperature
B) Decreasing activation energy
C) Decreasing pH
D) Increasing activation energy

Q.62 The type of inhibition in which inhibitor has no structural similarity to substrate and combines with enzyme at other than the active site is called:
A) Irreversible inhibition
B) Non-competitive and reversible inhibition
C) Competitive inhibition
D) Reversible inhibition

Q.63 Solubility of fatty acids in organic solvents and their melting points increase with increase in the:
A) Number of carbon atoms in chain
B) Number of oxygen atoms in chain
C) Number of hydrogen atoms in chain
D) Number of acid groups in chain

Q.64 _____ is much more soluble in organic solvent than
A) Acetic acid, butyric acid
B) Bytyric acid, palmitic acid
C) Palmitic acid, butyric acid
D) Palmitic acid, oleic acid

Q.65 Melting point of palmitic acid is:
A) 61.3°C
B) 63.1°C
C) 80°C
D) -8°C

Q.66 Melting point of butyric acid is:
A) 61.3°C
B) 63.1°C
C) 80°C
D) -8°C

Q.67 The smallest fatty acid is:
A) Oleic acid
B) Palmitic acid
C) Butyric acid
D) Acetic acid

Q.68 A saturated fatty acid with four carbon atoms is:
A) Oleic acid
B) Palmitic acid
C) Butyric acid
D) Acetic acid

Q.69 A saturated fatty acid with sixteen carbon atoms is:
A) Acetic acid
B) Butyric acid
C) Palmitic acid
D) Oleic acid

Q.70 Fats containing fatty acids are usually liquid at room temperature and are said to be oils.
A) Saturated
B) Unsaturated
C) Straight chain
D) Saturated unbranched

Q.71 Fats containing_____fatty acids are solid at room temperature.
A) Unsaturated C) Saturated
B) Branched D) Ringed

Q.72 Fat containing unsaturated fatty acids are usually represented by:
A) Oils C) Solid fats
B) Butter D) Banaspati

Q.73 _____fats are solid at room temperature.
A) Animal C) Plant
B) All D) No

Q.74 Fats and oils are:
A) Lighter than water C) Havier than water
B) Less viscous than water D) More denser than water

Q.75 The specific gravity of fats and oils is:
A) 0.08 C) 0.8
B) 0.008 D) 8.0

Q.76 The inhibitors that bind tightly and permanently to enzymes and destroy their globular structure and catalytic activity are:
A) Reversible inhibitors C) Irreversible inhibitors
B) Competitive inhibitors D) Non-competitive inhibitors

Q.77 Enzyme succinate dehydrogenase converts succinate into:
A) Malate C) Malonic acid
B) Citrate D) Fumarate

Q.78 If the detachable co-factor is an inorganic ion, then it is designated as:
A) Coenzyme C) Prosthetic group
B) Holoenzyme D) Activator

Q.79 The view that active site of an enzyme is flexible and when a substrate combines with it, cause changes in enzyme structure is known as:
A) Lock & key model C) Sliding filament model
B) Induce fit model D) Specificity model

Q.80 All coenzymes are derived from:
A) Proteins C) Vitamins
B) Nucleic acids D) Carbohydrate

Q.81 Optimum pH value for working of pancreatic lipase is:
A) 4.50 C) 7.60
B) 9.00 D) 4.00

Q.82 The competitive inhibitors have structural similarity with:
A) Active site C) Binding site
B) Substrate D) Co-enzyme

Q.83 Which molecular structure of enzyme is essential for activity of enzyme?
A) Quaternary structure C) Primary Structure
B) Secondary structure D) Tertiary structure

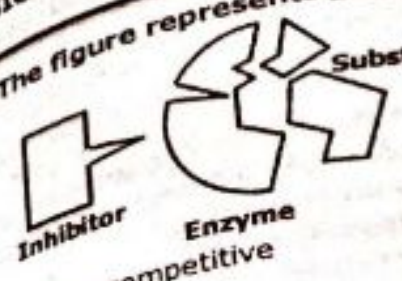
Q.84 Some enzymes require helper which is a non-protein part for its efficient functioning. That is called:
A) Accerator C) Cofactor
B) Prosthetic group D) Apoenzyme

Q.85 Pepsin, protein digesting enzyme acts best at pH:
A) 3.00 C) 4.5
B) 2.00 D) 6.00

Q.86 Which one of the following is an example of competitive inhibitor? (2015)
A) Glucose C) Fumarate
B) Succinic acid D) Melonate

Q.87 An enzyme required Mg^{++} to catalyze the substrate. The Mg^{++} is best identified as:
A) Prosthetic group C) Activator
B) Co-enzyme D) Inhibitor

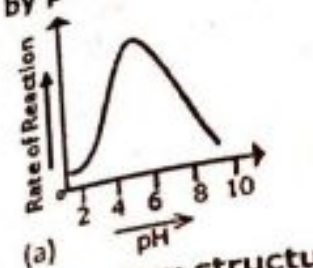
Q.88 The figure represents _____ Substr



A) Non-competitive
B) Irreversible

Q.89 According to _____ interacts with enzyme: (2
A) Induced fit
B) Emil Fischer

Q.90 Which one of the followi by pH? (2016) Answer: D



(a)

Q.91 Secondary structure of
A) Trypsin
B) keratin

Q.92 phosphoric acid has th
A) Hydrogen bond
B) Covalent bond

Q.93 NAD is an important:
A) Enzyme
B) Coenzyme

Q.94 A common carbohydr C-1 of glucose and C-
A) Starch
B) Lactose

Q.95 The DNA of an eleph following respects e
A) Kinds of genes for
B) Kinds of nucleotide
C) Number fo DNA Mo
D) Length of DNA mo

Q.96 The sugar Compon
A) $C_5H_{10}O_4$
B) $C_4H_{10}O_5$

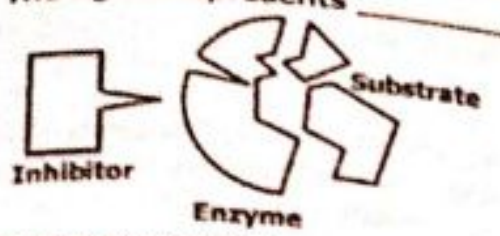
Q.97 All proteins contai
A) Primary structure
B) Tertiary structure

Q.98 _____Aris
A) Primary structur
B) Tertiary structur

Q.99 The two dimensio
A) L-shaped
B) X-shaped

Q.100 In beta glucose t
A) Lower side
B) both

Q.88 The figure represents _____ inhibitor:

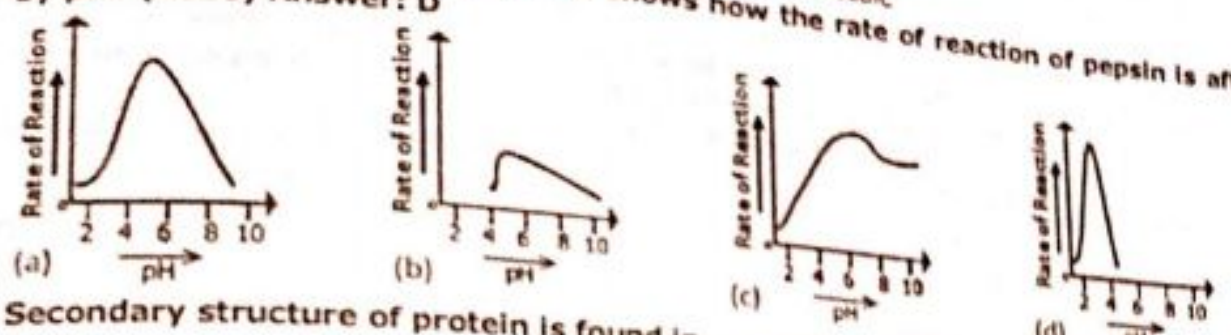


A) Non-competitive
B) Irreversible
C) Competitive
D) Isosteric

Q.89 According to _____ model the active site of enzyme is modified as the substrate interacts with enzyme: (2016)

A) Induced fit
B) Emil Fischer
C) Lock and Key
D) Fluid Mosaic

Q.90 Which one of the following graphs shows how the rate of reaction of pepsin is affected by pH? (2016) Answer: D



Q.91 Secondary structure of protein is found in

A) Trypsin
B) keratin
C) insulin
D) Glucagon

Q.92 Phosphoric acid has the ability to develop_with OH group of pentose sugar

A) Hydrogen bond
B) Covalent bond
C) Ester linkage
D) None of these

Q.93 NAD is an important:

A) Enzyme
B) Coenzyme
C) Hormone
D) Vitamin

Q.94 A common carbohydrate composed of glucose and fructose joined by a linkage between C-1 of glucose and C-2 of fructose is

A) Starch
B) Lactose
C) Maltose
D) Sucrose

Q.95 The DNA of an elephant and the DNA of a cherry tree will probably differ in all of the following respects except the:

A) Kinds of genes for which the DNA codes
B) Kinds of nucleotides utilized in forming DNA
C) Number fo DNA Molecules
D) Length of DNA molecules

Q.96 The sugar Component of DNA molecule has an empirical formula:

A) $C_5H_{10}O_4$
B) $C_4H_{10}O_5$
C) $C_5H_{10}O_5$
D) $C_6H_{12}O_6$

Q.97 All proteins contain

A) Primary structure
B) Tertiary structure
C) Secondary structure
D) All the above

Q.98 _____Arises only when a protein consists of two or more polypeptide chains

A) Primary structure
B) Tertiary structure
C) Secondary structure
D) Quaternary structure

Q.99 The two dimensional shape of tRNA is:

A) L-shaped
B) X-shaped
C) Clover leaf like
D) Y-shaped

Q.100 In beta glucose hydroxyl group at anomeric carbon is present at ___

A) Lower side
B) both
C) Uperside
D) at position 6

Q.101 The end products of translation are:
A) Polypeptides
B) Lipids
C) Amino acids
D) RNA

Q.102 Back bone of DNA and RNA
A) Sugar & Nitrogenous base
B) Sugar & Phosphate group
C) Nitrogenous base & Phosphate group
D) Sugar, Nitrogenous base

Q.103 Inhibition of succinic dehydrogenase by malonate is an example of
A) Competitive inhibition
B) Allosteric inhibition
C) Non-competitive inhibition
D) Enzyme repression

Q.104 A Dipeptides have
A) Two amino acids and one peptide bond
B) Two amino acids with three peptide bonds
C) two amino acid and two peptide bond
D) two monosaccharide's and one peptide bond

Q.105 No of carbon atoms in monosaccharide called heptoses are
A) 8
B) 6
C) 7
D) 5

Q.106 During the course of analyzing an unknown chemical, a chemist determines that the chemical is composed of carbon, hydrogen, and oxygen in the proportion of 1 carbon to 2 hydrogen to 1 oxygen. The chemical is probably:
A) An amino acid
B) A triglyceride
C) DNA
D) A monosaccharide

Q.107 An amino acid has a minimum of _____ carbon atoms and _____ nitrogen atom:
A) 1 & 2
B) 2 & 2
C) 2 & 1
D) 1 & 1

Q.108 Distance between base units of DNA is
A) 3.4 nm
B) 54 nm
C) 34 nm
D) none

Q.109 On which of the following molecules would you find codons?
A) Messenger RNA
B) Transfer RNA
C) Ribosomal RNA
D) Both a & b

Q.110 What term is used to describe the process by which proteins are synthesized from a genetic code?
A) Reproduction
B) Translation
C) Replication
D) Transcription

Q.111 Poisons like cyanide, antibiotics and some drugs are the examples of:
A) Enzymes
B) inhibitors
C) Co-enzymes
D) Transcription

Q.112 Which step causes activation of catalytic site of an enzyme?
A) Change in pH of the surroundings
B) Change in the charge of the active site
C) Formation of Enzyme Substrate complex.
D) Change in temperature

Q.113 A certain enzyme will hydrolyze egg white but not starch. Which statement best explains this observation?
A) Starch molecules are too large to be hydrolyzed
B) Enzyme molecules are specific in their actions
C) Egg white acts as a coenzyme for hydrolysis
D) Starch is composed of amino acids

Q.114 Which statement about enzyme is not true?
A) They consist of proteins, with or without a non-protein part
B) They change the rate of catalyzed reaction
C) They are sensitive to heat
D) they are nonspecific in their action

Q.115 Proteinaceous part of holoenzyme is:
A) Prosthetic group
B) Lecithin
C) Apo enzyme
D) None of these

Q.116 Cofactors:
A) Break hydrogen bonds in proteins
B) Increase activation energy
C) Help facilitate enzyme activity
D) very rare in livingorganism

Q.117 Why do drastic changes in the temperature or pH of a system alter enzyme activity?
A) They change the three dimensional shape of the enzyme
B) They disrupt hydrogen and ionic bonds in the enzyme
C) The active sites of a II enzymes have the same three dimensional shape
D) All of the above

Q.118 Which of the following statements about enzymes is true?
A) Some substrates can make enzymes change shape slightly
B) All enzymes have the some optimum pH
C) The active sites of all enzymes have the same three dimensional shape
D) All of the above

Q.119 The rate of any enzyme controlled reaction increases rapidly if the amount of enxyme is doubled in the presense of an unlimited substrate concentration. This is due to:
A) Number of active sites increases
B) Kinetic energy of molecules increases
C) Energy of activation lowers
D) Enzyme does not denature

Q.120 A ribozyme is _____with a well-defined tertiary structure that enables it to catalyze a chemical reaction:
A) RNA molecule
B) Conjugated molecule of RNA & Protein
C) Protein molecule
D) Globular protein having RNA

Q.121 Starch is present in tubers fruits and grains but absent in animal cells instead animals have a substance stored in liver and muscles known as.
A) Galactose
B) glycogen
C) glucagon
D) glucose

Q.122 Which is an example of a disaccharide?
A) Starch
B) Fructose
C) Lactose
D) Glycogen

Q.123 The covalent bond or bridge between two monosaccharide's to form a disaccharide is called a.
A) Hydroxyl bond
B) Carboxyl bond
C) Hydrogen bond
D) Glycosidic bond

Q.124 Glycosidic bond is formed by the.
A) Removal of oxygen
B) Removal of water
C) Addition of oxygen
D) Addition of water

Q.125 Most proteins are made up of.
A) 10 types of amino acids
B) 170 types of amino acids
C) 20 types of amino acids
D) 16 types of amino acids

Q.126 In glycine R is _____.
A) ethane
B) hydrogen
C) fatty acid
D) methane

Q.127 The structure of a fibrous protein comprises of polypeptide chains in the form of
A) Cluster
B) Long strands or fibrils
C) Spherical or curled up ball
D) Flat uncoiled chains

Q.128 Which of the following holds the alpha helix of protein in its place? (2018)
A) R group
B) Amino group
C) Disulphide
D) Hydrogen bond

Q.129 The number and sequence of amino acids along a polypeptide chain is called _____ structure of a protein.
A) Quaternary
B) Primary
C) Tertiary
D) secondary

Q.130 Sara is a chemistry student who is carrying out an experiment between an alcohol and acetic acid in the laboratory. The product formed at the end of the experiment will be.
A) Glycogen and water molecule
B) Glucose and oxygen
C) An ester and water molecule
D) Glycerol and sulfuric acid

Q.131 Lipids contain double amount of energy as compared to the same amount of carbohydrates due to the presence of.
A) Higher proportion of C-H bonds
B) Higher proportion of oxygen
C) Higher proportion of C-O bonds
D) Lower proportion of C-H bonds

Q.132 Which of the following is unsaturated fatty acid?
A) Stearic acid
B) Butyric acid
C) Palmitic acid
D) Oleic acid

Q.133 Which lipid is totally hydrophobic or insoluble?
A) Triglycerides
B) Waxes
C) Phospholipids
D) Terpenoids

Q.134 _____Inhibitors have structural similarity with substrate:
A) Irreversible
B) noncompetitive
C) Competitive
D) All of the above

Q.135 Enzyme B requires Zn2+ in order to catalyze the conversion of substrate X. The zind is best identified as a (n):
A) Coenzyme
B) Substrate
C) Cofactor
D) Product

Q.136 What about enzymes is wrong?
A) Thermo labile
B) Catalysts
C) Proteins in nature
D) None of these

Q.137 Which will cause the broken down of substrate?
A) Enzyme substrate complex
B) Enzyme Optimum pH
C) Enzymes+ substrate + water
D) Enzyme Optimum pH & Temperature

Q.138 One which help enzyme and is an organic non protein
A) Activator
B) Co enzyme
C) Cofactor
D) none of these

Q.139 Which of the following is a coenzyme?
A) NAD
B) NADP
C) FAD
D) All of above

Q.140 At a temperature below the freezing point of a n enzyme is
A) Unaffected
B) Slightly in activated
C) Inactivated
D) Killed

Q.141 The most important property of an enzyme is its
A) Composition
B) Thermal denaturation
C) Solubility
D) Specificity

Q.142 Enzyme inhibition caused by a substrate analog is
A) Competitive
B) In competitive
C) Noncompetitive
D) Semi-competitive

Q.143 An amino acid consists of which of the following elements:
A) C, H, O
B) C, H, O, N
C) C, H, N
D) N, H, O

Q.144 The position of double bond in oleic acid is:
A) C_6-C_7
B) C_8-C_9
C) C_7-C_8
D) C_9-C_{10}

Q.145 The highest percentage of RNA in the cell is of:
A) tRNA
B) mRNA
C) rRNA
D) Both 'a' & 'c'

Q.146 What about pyrimidines is not correct?
A) Monocyclic
B) 5 cornered
C) Found in DNA
D) None of these

Q.147 One of the following is not true about biological catalysts
A) Named enzyme
B) Start the Chemical reaction
C) Mostly protein by nature
D) Speed up a chemical reaction

Q.148 Which structure of enzyme is essential for the special shape of its active site?
A) Primary
B) Tertiary
C) Secondary
D) All of the above

Q.149 What is common in both competitive and noncompetitive inhibition? (2019)
A) Feedback inhibition
B) Non reversible inhibition
C) Irreversible inhibition
D) Reversible inhibition

Q.150 The type of energy reduced by the enzymes for biological reactions to occur is called the
A) Light energy
B) Active energy
C) Heat energy
D) Activation energy

Q.151 Carbohydrates in cell combin
glycoproteins and glycolipids
A) Lipids, Proteins
B) Carbohydrates, Proteins

Q.152 Which of the following is a p
A) -C-N
B) -C-P

Q.153 Amino acid in which the R-G
A) Alanine
B) Valine

Q.154 Myosin is a _____ ty
A) Intermediate
B) Globular

Q.155 Secondary structure of pro
A) Trypsin
B) Insulin

Q.156 Fatty acids are the orga
following:
A) Carboxylic
B) Acyl

Q.157 An amino acid molecule ha
peptide link between two c
A) 1 and 2
B) 1 and 3

Q.158 Which class of molecule is
A) phospholipid
B) cellulose

Q.159 Glycerol is the backbone m
A) ATP
B) terpenes

Q.160 A fatty acid is unsaturate
A) contains hydrogen
B) contains double bonds

Q.161 In RNA the nitrogen base
A) adenine
B) cytosine

Q.162 The ending—ose means
A) sugar
B) lipid

Q.163 Glycolipids and lipopro
A) cellular membrane
B) cell wall

Q.164 When two amino acid
A) hydroxyl
B) water

Q.165 What is the theoretic
amino acids?
A) one
B) two

Q.166 A polar molecule is i
A) soluble

Q.151 Carbohydrates in cell combine with and and the resulting compounds are called glycoproteins and glycolipids respectively.
A) Lipids, Proteins
B) Carbohydrates, Proteins
C) Carbohydrates, lipids
D) Proteins, Lipids

Q.152 Which of the following is a peptide bond?
A) -C-N
B) -C-P
C) -C-O
D) -C-S

Q.153 Amino acid in which the R-group is hydrogen is:
A) Alanine
B) Valine
C) Leucine
D) Glycine

Q.154 Myosin is a _____ type or protein:
A) Intermediate
B) Globular
C) Simple
D) Fibrous

Q.155 Secondary structure of protein is found in:
A) Trypsin
B) Insulin
C) Keratin
D) Glucagon

Q.156 Fatty acids are the organic compounds containing hydrogen, oxygen and one of the following:
A) Carboxylic
B) Acyl
C) Amino
D) Sucrose

Q.157 An amino acid molecule has the following structure. Which two of the groups combine to form a peptide link between two on?
A) 1 and 2
B) 1 and 3
C) 2 and
D) 2 AND 4

Q.158 Which class of molecule is the major component of cell membrane
A) phospholipid
B) cellulose
C) wax
D) triglyceride

Q.159 Glycerol is the backbone molecule for
A) ATP
B) terpenes
C) neutral lipids
D) Steroids

Q.160 A fatty acid is unsaturated if it
A) contains hydrogen
B) contains double bonds
C) contains an acid group
D) all of them

Q.161 In RNA the nitrogen base that takes the place of thymine is
A) adenine
B) cytosine
C) guanine
D) uracil

Q.162 The ending—ose means a substance Is a
A) sugar
B) lipid
C) protein
D)nucleic

Q.163 Glycolipids and lipoprotein are important components of
A) cellular membrane
B) cell wall
C) both of them
D) none of them

Q.164 When two amino acids are linked to form peptide linkage is removed
A) hydroxyl
B) water
C) carbon
D) nitrogen

Q.165 What is the theoretical number of chemically different dipeptides that mayor assembled from two amino acids?
A) one
B) two
C) three
D) four

Q.166 A polar molecule is In water
A) soluble
C) reactive

B) insoluble
D) Innert

Q.167 Which statement correctly describes a property of water?
A) a relatively large amount of heat is needed to increase its temperature
B) at normal room temperature, its molecules are bound together by ionic bonds
C) the highest density of water occurs below its freezing point
D) water acts as solvent for nonpolar molecules

Q.168 Estrogen, vitamin-D and cholesterol are all examples of
A) glycolipids
B) lipoproteins
C) terpenes
D) steroids

Q.169 Which term includes all others
A) carbohydrate
B) starch
C) monosaccharide
D) polysaccharide

Q.170 Choose the pair of terms that correctly completes this sentence: Nucleotide are to as are to proteins.
A) nucleic acids; amino acids
B) amino acids; polypeptides
C) glycosidic linkages; polypeptide linkages
D) polymers; polypeptides

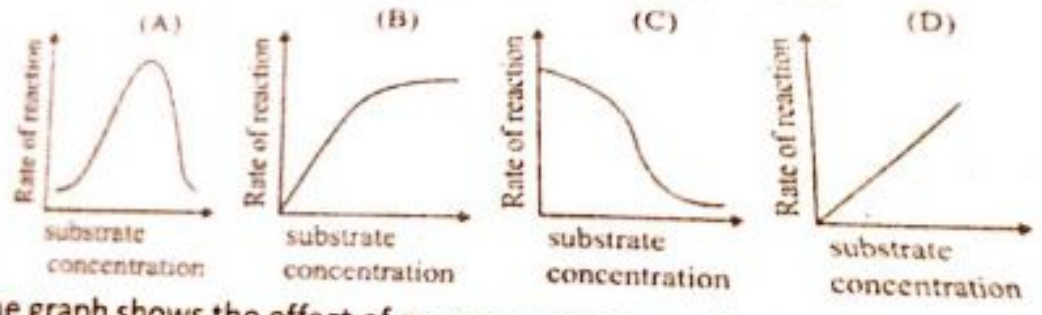
Q.171 The enantiomer of D-glucose is
A) D-galactose
B) L-galactose
C) both of them
D) none of them

Q.172 The catalytic activity of an enzyme is restricted to its small portion called?
A) Active site
B) Passive site
C) regulation site
D) allosteric site

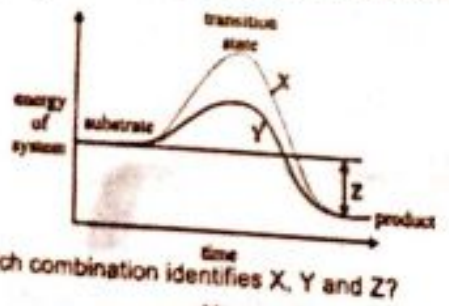
Q.173 Which of the following has a coenzyme activity?
A) NAD^+
B) Ca^{++}
C) both "a" and "b"
D) none of them

Q.174 Non -competitive inhibitors react with enzymes at
A) active site
B) allosteric site
C) both "a" and "b"
D) none of them

Q.175 Which graph shows the expected relationship between enzyme Activity and substrate concentration?



Q.176 The graph shows the effect of an enzyme on a reaction.



Which combination identifies X, Y and Z?

	X	Y	Z
A	catalyzed reaction	uncatalyzed reaction	activation energy
B	catalyzed reaction	uncatalyzed reaction	energy lost during reaction
C	uncatalyzed reaction	catalyzed reaction	energy gained by product
D	uncatalyzed reaction	catalyzed reaction	Over all energy change

Q.177 Combination of apoenzyme and coenzyme produces
A) prosthetic group
B) holoenzyme
C) enzyme
D) isoenzyme

Q.178 The specificity of enzyme is due to their
A) surface configuration
B) pH
C) hydrogen bonding
D) high molecular weight

Q.179 An essential feature of a competitive inhibitor is its ability to
A) activate an operator gene
B) combine with prosthetic group
C) modify a substrate
D) occupy an active site

Q.180 The reaction rate of salivary amylase with starch decreases as the concentration of chloride ions is reduced. Which of the following describe it role of the chloride ions?
A) allosteric inhibitors
B) cofactors
C) coenzyme
D) competitive inhibitor

Q.181 How does an enzyme increase the rate of a reaction?
A) by bringing the reacting molecules into precise orientation
B) by increasing the rate of random collisions of molecules
C) by shifting the point of equilibrium of the reaction
D) by supplying the energy required to start the reaction

Q.182 Many enzymes are secreted in inactive form to protect
A) cell proteins
B) mitochondria
C) cell membrane
D) cell DNA

Q.183 Erypsin is an example of?
A) carbohydrases
B) proteases
C) lipases
D) nucleases

Q.184 Ribozymes consist of:
A) only protein
B) protein + none protein part
C) only RNA
D) none of them

ANSWERS

1.	D	2.	B	3.	C	4.	B	5.	A	6.	C	7.	D	8.	C
9.	A	10.	B	11.	D	12.	A	13.	C	14.	A	15.	A	16.	D
17.	C	18.	A	19.	C	20.	C	21.	B	22.	B	23.	A	24.	B
25.	B	26.	C	27.	B	28.	C	29.	A	30.	A	31.	C	32.	D
33.	B	34.	B	35.	B	36.	C	37.	C	38.	A	39.	C	40.	B
41.	C	42.	D	43.	A	44.	C	45.	C	46.	D	47.	A	48.	C
49.	A	50.	C	51.	B	52.	A	53.	C	54.	A	55.	B	56.	D
57.	A	58.	B	59.	C	60.	A	61.	B	62.	B	63.	A	64.	C
65.	B	66.	D	67.	D	68.	C	69.	C	70.	B	71.	C	72.	A
73.	A	74.	A	75.	C	76.	C	77.	D	78.	D	79.	B	80.	C
81.	B	82.	B	83.	D	84.	C	85.	B	86.	D	87.	C	88.	A
89.	A	90.	D	91.	B	92.	C	93.	B	94.	D	95.	B	96.	A
97.	A	98.	D	99.	C	100.	C	101.	A	102.	B	103.	A	104.	A
105.	C	106.	D	107.	C	108.	A	109.	A	110.	B	111.	B	112.	C
113.	B	114.	D	115.	C	116.	C	117.	D	118.	A	119.	A	120.	A
121.	B	122.	C	123.	D	124.	B	125.	B	126.	B	127.	B	128.	D
129.	A	130.	C	131.	A	132.	D	133.	D	134.	??	135.	C	136.	D
137.	C	138.	B	139.	D	140.	C	141.	D	142.	A	143.	B	144.	D
145.	C	146.	B	147.	B	148.	B	149.	D	150.	D	151.	D	152.	A
153.	D	154.	D	155.	C	156.	A	157.	A	158.	A	159.	C	160.	B
161.	D	162.	A	163.	A	164.	B	165.	B	166.	A	167.	A	168.	A
169.	D	170.	A	171.	D	172.	A	173.	A	174.	B	175.	B	176.	C
177.	B	178.	A	179.	D	180.	B	181.	D	182.	A	183.	B	184.	C

Q.1 The outer me
A) Golgi appara
B) Endoplasmic

Q.2 The process b
within the lys
A) Endocytosis
B) Exocytosis

Q.3 Which of the
A) Ribosomes
B) Lysosomes

Q.4 The inner m
A) Cristea
B) Matrix

Q.5 Plastids are
A) Animals a
B) Plants

Q.6 Plasma mem
A) Phospholi
B) Lipids and

Q.7 The functio
A) rDNA
B) Ribosome

Q.8 Lipid metab
A) Smooth e
B) Sarcoplas

Q.9 Ribosomes
A) Tonoplas
B) Cytoplas

Q.10 The riboso
A) Endoplas
B) Golgi co

Q.11 The _____
lipid bilay
A) Unit me
B) Ultracen

Q.12 The enzym
A) Smooth
B) Chlorop

Q.13 Centriole
A) 9
B) 12

Q.14 Which of
A) Cytosk
B) Centric

Q.15 The solu
is knowr
A) Cytosc
B) Gelatin

Q.16 Endoplas
are nam
A) Crista
B) Cister

Q.17 Lipids sy
A) Mitoch
B) Rough

Q.18 The inta
A) Phago
B) Pinoc

Q.1 The outer membrane of the nuclear envelop is at places continuous with the:
A) Golgi apparatus
B) Endoplasmic reticulum
C) Lysosomes
D) Peroxisomes

Q.2 The process by which unwanted structures within the cell are engulfed and digested within the lysosome is known as:
A) Endocytosis
B) Exocytosis
C) Autophagy
D) Hydrolysis

Q.3 Which of the following organelles is concerned with the cell secretion?
A) Ribosomes
B) Lysosomes
C) Golgi apparatus
D) Mitochondria

Q.4 The inner membrane of mitochondria is folded to form finger like structure called:
A) Cristea
B) Matrix
C) Vesicle
D) Cisternae

Q.5 Plastids are only found in the:
A) Animals and plants
B) Plants
C) Animals
D) Viruses

Q.6 Plasma membrane is chemically composed of:
A) Phospholipids only
B) Lipids and carbohydrates
C) Lipids and proteins
D) Glycoproteins

Q.7 The function of nucleolus is to make:
A) rDNA
B) Ribosomes
C) RNA
D) Chromosomes

Q.8 Lipid metabolism is the function of:
A) Smooth endoplasmic reticulum
B) Sarcoplasmic reticulum
C) Mitochondria
D) Rough endoplasmic reticulum

Q.9 Ribosomes exist in two forms; either attached with the RER or freely dispersed in the:
A) Tonoplast
B) Cytoplasm
C) Golgi bodies
D) SER

Q.10 The ribosomal RNA is synthesized and stored in:
A) Endoplasmic reticulum
B) Golgi complex
C) Nucleolus
D) Chromosomes

Q.11 The _____ model of plasma membrane suggests that proteins are embedded in lipid bilayer:
A) Unit membrane
B) Ultracentrifuge
C) Permeable
D) Fluid mosaic

Q.12 The enzymes of Lysosomes are synchronized on:
A) Smooth endoplasmic reticulum
B) Chloroplast
C) Rough endoplasmic reticulum
D) Golgi apparatus

Q.13 Centrioles are made up of _____ microtubules:
A) 9
B) 12
C) 3
D) 27

Q.14 Which of the following structure is absent in higher plants and found in animal cells?
A) Cytoskeleton
B) Centriole
C) Mitochondria
D) Cytoplasm

Q.15 The soluble part of the cytoplasm or liquid that remains when all organelles are removed is known:
A) Cytosol
B) Gelatin material
C) Solution
D) Cytoskeleton

Q.16 Endoplasmic reticulum contains a system of flattened membrane-bounded sacs which are named as:
A) Cristae
B) Cisternae
C) Marks
D) Tubules

Q.17 Lipids synthesis/metabolism takes place in which of the following organelle?
A) Mitochondria
B) Rough endoplasmic reticulum
C) Vacuoles
D) Smooth endoplasmic reticulum

Q.18 The intake of liquid material across the cell membrane is:
A) Phagocytosis
B) Pinocytosis
C) Endocytosis
D) Exocytosis

Q.19 Which one of the following is the site of oxidative phosphorylation in mitochondria?
A) Cristae
B) Outer membrane
C) Matrix
D) Ribosomes

Q.20 Organelle involved in the synthesis of ATP is:
A) Ribosome
B) Nucleus
C) Mitochondria
D) Centriole

Q.21 During animal cell division the spindle fibers are formed from:
A) Mitochondria
B) Ribosomes
C) Centrioles
D) Lysosomes

Q.22 Which component of the cell is concerned with cell secretion?
A) Plasma membrane
B) Cytoskeleton
C) Golgi complex
D) Mitochondria

Q.23 In mitochondria, a small knob like structures called F_1 particles are found in:
A) Outer membrane
B) Inner membrane
C) Outer compartment
D) Inner compartment

Q.24 Fluid mosaic model of plasma membrane states that protein molecules float in a fluid _____ bilayer:
A) Galactose
B) Glucose
C) Phospholipids
D) Carbohydrate

Q.25 How many triplets of microtubules are present in centriole?
A) Ten
B) Nine
C) Eight
D) Seven

Q.26 Which one of the following cell structure is involved in the synthesis of lipids?
A) Endoplasmic reticulum
B) Centriole
C) Golgi complex
D) Mitochondrion

Q.27 Ribosomes are tiny organelles, which are involved in the synthesis of:
A) Protein
B) Nucleus
C) RNA
D) Nucleosome

Q.28 Which organelle is bounded by two membranes?
A) Ribosome
B) Lysosome
C) Mitochondrion
D) Nucleolus

Q.29 The inner membrane of mitochondria form extensive infoldings called:
A) Cristae
B) Lamella
C) Cisternae
D) Bifidae

Q.30 Which one of the following organelle is found in both prokaryotic and eukaryotic cells?
A) Centriole
B) Nucleus
C) Endoplasmic Reticulum
D) Ribosome

Q.31 Out of the given option, choose the one which shows the structures found only in plants:
A) Vacuole, Chloroplast, Ribosomes
B) Chloroplast, Cell Wall, Vacuole
C) Chloroplast, Microtubules, Peroxisomes
D) Chloroplast, Cell Wall, Mitochondria

Q.32 Presence of large central vacuole is the characteristic of:
A) Prokaryotes
B) Fungi
C) Protists
D) Plants

Q.33 At the beginning of nuclear division, the number of microtubule triplets in two pairs of centrioles that migrate to opposite poles are:
A) 9
B) 108
C)18
D) 36

Q.34 The rapid exchange of materials through carrier proteins across the plasma membrane is called:
A) Passive Diffusion
B) Endocytosis
C) Active Transport
D) Facilitated Diffusion

Q.35 Which one of the following is not a constituent of cell membrane?
A) Glycolipids
B) Phospholipids
C) Proline
D) Cholesterol

Q.36 Which of the following is cha
A) One non polar head and two
B) Two non-polar heads and on

Q.37 Glyoxisomes are the sites f
A) Fatty acids
B) Enzymes

Q.38 Cyclosis and amoebold mo
A) Microtubules
B) Intermediate filaments

Q.39 Microtubules are made up
A) Tubulin
B) Actin

Q.40 In active transport carrie
transport molecules.
A) Against concentration g
B) Along concentration gra
C)Against concentration g
D)Along concentration gra

Q.41 Which of the following
A) Uphill transport
B) High selectivity

Q.42 Select the correct stat
A) Lipids are arranged i
C)fluid mosaic model of
B)Na+ and K+ ions mo
D)Proteins make up 60

Q.43 Na+/K+ pump is ass
A) Passive transport
B) Osmosis

Q.44 What is correct abo
diffusion?
A) It is an active tran
B) It cause transport
C) It is insensitive to
D) It is a very specif

Q.45 The energy neces
come from.
A) ATP
B) Osmosis

Q.46 The cell membra
A) Cellulose
B) Lipids

Q.47 Transport prote
A) Diffusion
B) Facilitated tra

Q.48 The basic struc
A) Proteins
B) Cytoskeleton

Q.49 The organelle
A) Smooth Endo
B) Golgi Appara

Q.50 Peroxisomes
A) 0.05µm
B) 0.5µm

Q.51 Cell membra
A) Lipids & ca
B) Lipids & Pr

Q.36 **Which of the following is characteristic of phospholipids of plasma membrane?**
A) One non polar head and two polar tails
B) Two non-polar heads and one polar tail
C) One polar head and two non-polar tails
D) Two polar heads and one non polar tail

Q.37 **Glyoxisomes are the sites for breakdown of ____ to succinate:**
A) Fatty acids
B) Enzymes
C) Proteins
D) Lipids

Q.38 **Cyclosis and amoeboid movements are due to:**
A) Microtubules
B) Intermediate filaments
C) Microfilaments
D) Centriole

Q.39 **Microtubules are made up of:**
A) Tubulin
B) Actin
C) Tropomyosin
D) Keratin

Q.40 **In active transport carrier proteins are used which use energy in the form of ATP, to transport molecules.**
A) Against concentration gradient across cell wall
B) Along concentration gradient across cell membrane
C)Against concentration gradient across cell membrane
D)Along concentration gradient across cell wall

Q.41 **Which of the following criteria does not relate to facilitated transport?**
A) Uphill transport
B) High selectivity
C) Requirement of special membrane proteins
D) Transport saturation

Q.42 **Select the correct statement from the following regarding cell membrane.**
A) Lipids are arranged in a bilayer with polar heads towards the inner part
C)fluid mosaic model of cell membrane was proposed by singer and Nicolson
B)Na+ and K+ ions move across cell membrane by passive transport
D)Proteins make up 60 to 70% of the cell membrane

Q.43 **Na+/K+ pump is associated with.**
A) Passive transport
B) Osmosis
C) Active transport
D) Imbibition

Q.44 **What is correct about the movement of substance across the membrane in facilitated diffusion?**
A) It is an active transport
B) It cause transport of molecules from low concentration to high concentration
C) It is insensitive to inhibitors
D) It is a very specific transport

Q.45 **The energy necessary for active transport across cytoplasmic membrane is believed to come from.**
A) ATP
B) Osmosis
C) Diffusion
D) Kinetic energy

Q.46 **The cell membrane is composed primarily of.**
A) Cellulose
B) Lipids
C) Chitin
D) Lipids and proteins

Q.47 **Transport proteins are required for.**
A) Diffusion
B) Facilitated transport
C) Osmosis
D) Facilitated transport and active transport

Q.48 **The basic structure of plasma membrane is provided by:**
A) Proteins
B) Cytoskeleton
C) Cholesterols
D) Phospholipids

Q.49 **The organelle involved in detoxification of drugs and poisons in the liver cells is:**
A) Smooth Endoplasmic Reticulum
B) Golgi Apparatus
C) Rough Endoplasmic Reticulum
D) Lysosomes

Q.50 **Peroxisomes are approximately ____in diameter:**
A) 0.05µm
B) 0.5µm
C) 0.5nm
D) 5µm

Q.51 **Cell membrane is chemically composed of**
A) Lipids & carbohydrates
B) Lipids & Protein
C) Proteins and carbohydrates
D) Lipids, Protein & carbohydrates

Q.52 Which of the following is not found in animal cells?
A) cell wall
B) central vacuole
C) chloroplast
D) all a, b and c

Q.53 Movement of materials against concentration gradient through plasma membrane is termed as
A) Osmosis
B) Passive transport
C) Active transport
D) Diffusion

Q.54 Biological membrane includes.
A) Only nuclear membrane
B) only membranes of golgi complex
C) Only mitochondrial membrane
D) All the intracellular membranes along with plasma membrane

Q.55 The difference between active transport and facilitated diffusion is that in the latter.
A) No carrier protein is involved
B) Substances are brought in against the concentration gradient
C)A carrier protein brings in the substance down the concentration gradient
D)Substance are internalized slowly

Q.56 Which of the following is not found in most of the plant cells?
A) Flagellum
B) Centriole
C) Lyso-some
D) All a, b and c

Q.57 The substance which cannot cross the cell membrane more easily are
A) Hydrophobic
B) Hydrophilic
C) Ionic
D) Inorganic

Q.58 Which statement is not true of membrane phospholipids?
A) They are amphipathic
B) They have hydrophobic tails
C) They have hydrophilic heads
D) They flop readily from one side of the membrane to the other

Q.59 Which of the following is related to glycosylation of protein?
A) Lysosome
B) Peroxisome
C) Mitochondria
D) Rough endoplasmic reticulum

Q.60 DNA is present in.
A) Chromosomes and dictyosomes
B) mitochondria and chloroplasts
C) Chloroplasts and lysosomes
D) Mitochondria and endoplasmic reticulum

Q.61 A group of ribosomes attached to mRNA are known as
A) Polymers
B) Polypeptide
C) Polysome
D) Polymerase

Q.62 Palade studied
A) Endoplasmic Reticulum
B) Peroxisome
C) Glyoxisomes
D) Ribosomes

Q.63 Which of the following is responsible for the mechanical support protein synthesis and enzyme transport?
A) Cell membrane
B) Dictyosome
C) Mitochondria
D) Endoplasmic reticulum

Q.64 The intake of liquid material by plasma membrane is termed as
A) Endocytosis
B) Phagocytosis
C) Pinocytosis
D) None a, b and c

Q.65 Prokaryotic cell wall is made up of
A) Cellulose
B) Chitin
C) Murein
D) Lignin & Pectin

Q.66 Amount of lipids in plasma membrane is about
A) 20 - 40%
B) 20 - 60%
C) 40 - 69%
D) 40 - 80%

Q.67 Which one of the following structures in an organelle within an organelle?
A) Peroxisome
B) Mesosomes
C) ER
D) Ribosome

Q.68 **Important site for formation of glycoproteins and glycolipids is.**
A) Plastid
B)Vacuole
C) Lysosome
D) Golgi apparatus

Q.69 **Which one of the following has its own DNA.**
A) Mitochondria
B) Lysosome
C) Dictyosome
D) Peroxisome

Q.70 **Plant cells and animal cells differ in that.**
A) Plant cells lack chloroplast which are found in animal cells
B) Animal cells have thicker cell walls than plant cells
C) Plant cells have a single large vacuole while animal cells have many
D) None

Q.71 **Which of the following structure function pairs is mis matched?**
A) Nucleolus ribosome production
B) Ribosome protein synthesis
C) Lysosome intracellular digestion
D) Micro tubules muscle contraction

Q.72 **Eukaryotic and prokaryotic cells share all of the following features except.**
A) Ribosome dependent protein synthesis
B) A selectively permeable plasma membrane
C) ATP synthesis linked to a proton gradient
D) A cytoskeleton of tubulin

Q.73 **A major site for synthesis of lipids is.**
A) Nucleoplasm
B) SER
C) RER
D) Symplast

Q.74 **The golgi complex plays a major role.**
A) In post translational modification of proteins and glycosidation of lipids
B) In trapping the light and transforming it into chemical energy
C) In digesting proteins and carbohydrates
D) As energy transferring organelles

Q.75 **Plasmodesmata are.**
A) Membranes connecting the nucleus with Plasmalemma
B) Connections between adjacent cells
C) Lignified cemented layers between cells
D) Locomotary structures

Q.76 **Cytoskeleton is made up of.**
A) Cellulosic microfibrils
B) Calcium carbonate granules
C) Proteinaceous filaments
D) Callose deposits

Q.77 **What is true about ribosomes.**
A) These are found only in eukaryotic cells
B) These are self splicing introns of some RNAs.
C) The prokaryotic ribosomes are 80S where 'S' stands for sedimentation coefficient
D) These are composed of ribonucleic acid and proteins

Q.78 **Ribosomal RNA is actively synthesized in.**
A) Nucleoplasm
B) Lysosomes
C) Ribosomes
D) Nucleolus

Q.79 **Which one of the following cellular parts is correctly described?**
A) Centrioles – sites for active RNA synthesis
B) Ribosomes – those on chloroplasts are larger (80s) while those in the cytoplasm are smaller (70s)
C)Lysosomes – optimally active at a pH of about 8.5
D)Thylakoids – flattened membranous sacs forming the grana of chloroplast

Q.80 **Which of the following is concerned with cell secretions?**
A) Golgi complex
B) Ribosomes
C) Mitochondria
D) Peroxisomes

Q.81 **Unit which specifies sedimentation rate of a specific particle or molecule in a medium during ultracentrifugation is**
A) Micormeter
B) Kcal/ mole
C) Svedberg
D) Joule

Q.82 **Plant and animal cells both have.**
A) Cell membrane and nucleolus
B) Nucleolus and chloroplast
C) Cell membrane and cell wall
D) Nucleus and cell wall

Q.83 **Polysomes are formed by.**
A) Several ribosomes attached to a single mRNA
B) Many ribosomes attaché to a strand of endoplasmic reticulum
C) A ribosome with several subunits
D) Ribosomes attached to each other in a linear arrangement

Q.84 **Lysosomes are cytoplasmic organelles and are different from others due to their**
A) Physiology
B) Histology
C) Morphology
D) Pathology

Q.85 **The approximate diameter of peroxisomes is**
A) 5µm
B) 0.5µm
C) 0.05µm
D) 0.005µm

Q.86 **Which one of the following is not considered as a part of the endomembrane system.**
A) Golgi complex
B) Vacuole
C) Peroxisome
D) Lysosome

Q.87 **Oxidative metabolism is carried out _____ of mitochondria.**
A) in the side of the outer membrane
B) on the surface on the inner membrane
C) in the inter membrane space
D) in the matrix

Q.88 **The complex of sugar polymers and proteins which are patchily distributed on the plasma membrane of animal cells is called.**
A) cellulose
B) glyocalyx
C) chitin
D) cytoskeleton

Q.89 **Which of the following statement is wrong?**
A) fungi have mitochondria
B) mitochondria have DNA and ribosome
C) Mitochondria ribosome's resemble more to eukaryotic ribosome
D) Mitochondria are self-replicating organelles

Q.90 **Protoplasm of plant cell is**
A) Less viscous than animal cell
B) Equal in viscosity to the animal cell
C) more viscous than animals
D) none

Q.91 **Which of the following is not a characteristic of prokaryotic?**
A) DNA
B) cell wall
C) cell membrane
D) endoplasmic reticulum

Q.92 **The term "nuclear envelope" is more correct than the term "nuclear membranes" because.**
A) the enclosure has pores which membranes do not
B) the enclose is made up of two membranes
C) the chemical composition is inconsistent with cellular membrane.
D) none of the above. The two terms are perfect of synonyms

Q.93 **Smooth endoplasm reticulum helps to**
A) synthesis
B) prepare food
C) detoxify the harmful drugs
D) decompose proteins

Q.94 **The ribosomes are attached to mRNA through _____ ribosomal subunit.**
A) large
B) small
C) both a and b
D) none of these

Q.95 **Which is present in both prokaryotic and Eukaryotic cells?**
A) Nucleus
B) Mitochondria
C) Golgi Apparatus
D) Ribosomes

Q.96 **Correct statement about Golgi complex is**
A) Inner convex surface is forming face
B) Outer convex surface is maturing face
C) Inner concave surface is forming face
D) Outer convex surface is forming face

Q.97 **The cisternae break up into vesicles from the**
A) forming face
B) Maturing face
C) convex face
D) outer face

Q.98 **Bacterial cell are prokaryotic in comparison to a typical eukaryotic cell they would**
A)lack a plasma membrane
B)be smaller
C) have a smaller nucleus
D) have a grater verity of organelles

Q.99 A cell has mitochondria , ribosome's smooth and rough ER, and other parts. Based on this information, it could not be
A) a bacterium
B) a cell from a pine tree
C) a yeast cell
D) actually, it could be any of the above

Q.100 Eukaryotic ribosome's are composed of an almost equal amount of _____ and proteins
A) DNA
B) carbohydrates
C) RNA
D) lipids

Q.101 The attachment of ribosomal subunits is controlled by _____ Ions
A) Mg^{2+}
B) K^{+}
C) Ca^{2+}
D) Na^{+}

Q.102 According to the fluid mosaic model of cell membrane
A) the most common type of molecules in the membrane are proteins
B) basic membrane structure results from how the proteins interact with water
C) the membrane is a highly mobile mixture of phospholipids and proteins
D) the unique properties of cell types are determined by their phospholipids.

Q.103 Each cell of frog contains autosomes
A) 18
B) 26
C) 24
D) 48

Q.104 Nucleus is only visible when the cell is in _____ stage
A) Non dividing
B) active
C) dividing
D) both a & b

Q.105 The free ribosome's of the mitochondria are present in its
A) mitochondrial matrix
B) on the outer membrane
C) inter membrane space
D) on the cristae of the inner membrane

Q.106 Two function of rough endoplasmic reticulum are to
A) Detoxify and transport drugs
B) Synthesis and transport pertains
C) modify and active hormones
D) join with and activate hormones

Q.107 An organelle composed of membranous tubules that synthesize testosterone is the
A) Vacuole
B) Rough endoplasmic reticulum
C) Golgi apparatus
D) smooth endoplasmic reticulum

Q.108 Prokaryotic cells are different from eukaryotic cell in that prokaryotic cell lack
A) Cell wall
B) mitochondria
C) ribosome's
D) cell membrane

Q.109 Substances cross the cell membrane more easily when they are
A) water soluble
B) alcohol soluble
C) proteins soluble
D) lipid soluble

Q.110 Which of the following properties is incorrect for both mitochondria and chloroplast?
A) both have an electron transport system
B) both are present in cell
C) ATP synthesis
D) both are double membrane structure

Q.111 Eukaryotic cells are more efficient than prokaryotes because their internal compartmentalization.
A) Makes each compartment nutritionally independent of all others.
B) Allows of specialization through the subdivision of particular tasks.
C) Allows of specialization through merging of different tasks.
D) Reduces overall cell size

Q.112 Passage through pores in the nuclear envelop is restricted primarily to.
A) Proteins< RNA and protein RNA complexes
B) DNA and RNA
C) lipids and glycolipids
D) RNA and protein carbohydrate complexes

Q.113 Which of the following is also called bulk transport
A) endocytosis
B) active transport
C) exocytosis
D) both a & b

Q.114 Extra nuclear DNA is found in
A) Lysosomes
B) mitochondria
C) Golgi bodies
D) mesosomes

Q.115 According to fluid mosaic model, plasma membrane presents
A) A quasi-fluid structure
B) A polar structure
C) a micellar structure
D) unit membrane structure

Q.116 What is the most important diff b/w active and passive cell transport?
A) active transport require energy input, passive transport dose not
B) active transport occurs in animals, passive transport occurs in plant
C) active transport does not use membrane, passive transport always use membrane
D) active transport occurs whenever an organisms moves, passive transport dose not involve movement of the organisms

Q.117 Which of the following statements best describes the fluid mosaic model of the plasma membrane
A) Sheet of protein
B) Sugar- phosphate backbone
C) Phospholipids bilayer
D) complementary base template

Q.118 Which of the following cell organelles produces secretary vesicles?
A) mitochondrion
B) lysosome
C) Golgi apparatus
D) rough endoplasmic reticulum

Q.119 Which of the following moves material against a concentration gradient?
A) osmosis
B) active transport
C) diffusion
D) facilitated transport

Q.120 What is the sequence of organelles that a secreted protein would have passed through on it journey out of cell?
A) Mitochondria, Golgi apparatus, cell membrane
B) Cellmembrane, mitochondria, Golgi apparatus
C) Rough endoplasmic reticulum, Golgi apparatus, cell membrane
D) Golgi apparatus, rough endoplasmic reticulum, cell membrane

Q.121 In which of the following is the greatest amount of deoxyribonucleic acid (DNA) found?
A) Nucleus
B) nucleolus
C) ribosome's
D) nuclear envelope

Q.122 Which of the following statement best describes the fluid mosaic model of the plasma membrane?
A) a single layer of proteins surrounding a single layer of lipids
B) a single layer of lipids surrounding a layer of proteins
C) a lipid bilayer with protein molecules dispersed within it
D) a single layer of proteins with lipid molecules dispersed within

Q.123 Which of the following is/are energy consuming process(s)?
A) endocytosis
B) active transport
C) excocytosis
D) all

Q.124 Which of the following in plasma membrane does not have transport function?
A) channel protein
B) receptor molecules
C) carrier protein
D) none

Q.125 Which of the following is the function of SER?
A) Detoxification of drugs
B) synthesis of steroids
C) storage of calcium
D) all

Q.126 Golgi apparatus is practically important in
A) secretary cell
B) synthesis cell
C) storage cell
D) all

Q.127 An important function of Golgi apparatus is the formation of
A) gloxisomes
B) ribosome's
C) lysosomes
D) peroxisomes

Q.128 If 15 μm size objects is observed under light microscope using 5X eyepieces and 10X objective its magnified image size will be.
A) 750 μm
B) 50 μm
C) 500 μm
D) 250μm

Q.129 The ability to distinguish between two separate points/objects is,
A) Magnification
B) Centrifugation
C) Fractionation
D) Resolution

Q.130 The membrane of ER is
A) Permeable
B) selectively permeable
C) semi permeable
D) impermeable

Q.131 The structure present in a eukaryotic cell but absent in prokaryotic cells is.
A) DNA
B) Ribosomes
C) Cell surface membrane
D) Nucleus

Q.132 Among followings which cellular organelle contains circular DNA similar to those found in bacteria?
A) Lysosome
B) Chloroplast
C) Nucleus
D) Ribosome

Q.133 Membranous units forming a series of continuous and discontinuous cavities in cell are called
A) plasmodesmata
B) chromatin network
C) plasmalemma
D) endoplasmic reticulum

Q.134 RNA is absent in
A) plasmalemma
B) ribosome's
C) chromosomes
D) cytoplasmic

Q.135 The space b/w the outer and inner mitochondrial membranes is
A) Perimitochondrila space
B) Periplasmic space
C) inerter membrane space
D) both a & b

Q.136 The inner mitochondrial membrane is compartmentalized into numerous cristae which
A) Expand the surface area of the inner mitochondrial membrane
B) Enhance its ability to produce ATP
C) Have F_1 particles attached
D) all

Q.137 The Cisternae breaks up into vesicles from _____ of Golgi complex.
A) Convex maturing face
B) Concaves forming face
C) Concave forming face
D) Concave maturing face

Q.138 Which of the following is the major advantage of using a light microscope instead of an electron microscope?
A) superior resolving power
B) Constant depth of focus
C) observation of living matter
D) use of very thin sectoins

Q.139 Some cellular organe4les are bound by a single membrane, while other organelles have tow membranes (envelopes around them which one of the following is correct

	Single membrane	Double membrane
A	Peroxysomes , lysosome	Nucleus, chloroplast
B	Chloroplast, lysosome	Nucleus, peroxysomes
C	Nucleus, chloroplast	Lysosome, peroxysomes,
D	Nucleus, lysosomes	Chloroplast, peroxysomes,

Q.140 Which of the following cell structures contains the highest concentration of RNA?
A) centriole
B) lysosome
C) chromosome
D) nucleolus

Q.141 A tadpole's tail is gradually broken-down during metamorphosis into an adult frog. Which organelle increases in number in the cells of the tail at this time?
A) centriole
B) endoplasmic reticulum
C) Golgi complex
D) lysosomes

Q.142 Which of the following organelles always contains DNA?
A) centriole
B) Golgi complex
C) lysosome
D) mitochondria

Q.143 Which distinguishes a prokaryotic cell from a eukaryotic cell?
A) prokaryotic cell have a cell wall and a nucleus
B) prokaryotic cells have no membrane bound organelles
C) prokaryotic cells have a centriole
D) prokaryotic cells have no ribosomes

Q.144 The elasticity of the plasma membrane demonstrates that it is made up in part of
A) lipids
B) nucleic acids
C) carbohydrates
D) proteins

Q.145 Filaments present in flagella and cilia are
A) microfibrils
B) microtubules
C) microfilaments
D) microvilli

Q.146 Which of the following structure is found in all living organisms:
A) cell membrane
B) nucleus
C) lysosome
D) vacuole

Q.147 The cell wall of plant cell is different from that of prokaryotes in:
A) both structure and chemical composition
B) structure only
C) chemical composition only
D) number of layers only

Q.148 Which of the following are present in prokaryotic cells:
A) chloroplast, DNA, nuclear envelope
B) chromosomes, mitochondria, nuclear envelope
C) cytoplasm, DNA, mitochondria
D) cytoplasm, DNA, ribosome

Q.149 Which of the following is present in all eukaryotic cells:
A) cell wall
B) diploid nucleus
C) flagellum
D) membrane bounded organelles

Q.150 Which of the following would be more prominent in a secretory cell than nor secretory cell:
A) lysosome
B) Golgi complex
C) mitochondrion
D) ribosome

Q.151 When a glycoprotein is being synthesized for secretion from a cell, which rout: is it most likely to take?
A) Golgi complex → REF → SER
B) REF → Golgi complex → SER
C) RER → SER- Golgi complex
D) SER → Golgi complex → RER

Q.152 Which one of the following is responsible for cyclosis?
A) microtubule
B) microfilament
C) intermediate filament
D) none of them

ANSWERS

1.	B	2.	C	3.	C	4.	A	5.	B	6.	C	7.	B	8.	A
9.	B	10.	C	11.	D	12.	C	13.	D	14.	B	15.	A	16.	B
17.	D	18.	B	19.	A	20.	C	21.	C	22.	C	23.	B	24.	C
25.	B	26.	A	27.	A	28.	C	29.	A	30.	D	31.	B	32.	D
33.	D	34.	D	35.	C	36.	C	37.	A	38.	C	39.	A	40.	C
41.	A	42.	C	43.	C	44.	D	45.	A	46.	D	47.	D	48.	D
49.	A	50.	B	51.	D	52.	D	53.	C	54.	D	55.	C	56.	D
57.	C	58.	D	59.	D	60.	B	61.	C	62.	D	63.	D	64.	C
65.	C	66.	A	67.	D	68.	D	69.	A	70.	C	71.	D	72.	D
73.	B	74.	A	75.	B	76.	C	77.	D	78.	D	79.	D	80.	A
81.	C	82.	B	83.	A	84.	C	85.	B	86.	C	87.	B	88.	B
89.	C	90.	A	91.	D	92.	B	93.	C	94.	B	95.	D	96.	D
97.	C	98.	B	99.	A	100.	C	101.	A	102.	C	103.	C	104.	A
105.	A	106.	B	107.	D	108.	B	109.	D	110.	B	111.	B	112.	A
113.	D	114.	B	115.	A	116.	A	117.	C	118.	C	119.	B	120.	C
121.	A	122.	C	123.	D	124.	B	125.	A	126.	A	127.	C	128.	A
129.	D	130.	B	131.	D	132.	D	133.	D	134.	A	135.	D	136.	D
137.	D	138.	C	139.	A	140.	D	141.	D	142.	B	143.	B	144.	A
145.	C	146.	D	147.	D	148.	D	149.	B	150.	B	151.	C	152.	B

Q.1 By parasympathetic nervous system.
A) Heart beat is increased
B) Heart beat is decreased
C) Heart beat is not initiated
D) Heart beat is not affected

Q.2 Myelin sheath:
A) Is a part of neurons
B) is made up of lipid - protein complex
C) begin to form after birth
D) do not act as an insulator

Q.3 Neurons are
A) mostly myelinated
B) found only in brain
C) consists of two parts axons and dendrites
D) similar considerably in size and shape

Q.4 Axons are:
A) usually carry impulse towards the cell body
B) few millimeter to several meters in length in brain
C) contain mitochondria only
D) cytoplasmic processes

Q.5 Oxytocin and antidiretic hormones (ADH) are produced in
A) pituitary gland
B) posterior lobe of pituitary
C) Hypothalamus
D) All of these

Q.6 Dorsal roots contain
A) cell bodies of sensory neurons
B) axons of sensory neurons
C) axons of motor neurons
D) none of these

Q.7 The normal speed of nerve impulse in humans is
A) 100 ms^{-1}
B) 140 ms^{-1}
C) 120 ms^{-1}
D) none of these

Q.8 Classification of neurons as sensory motor and relay neurons is
A) Physiological classification of neurons
B) Anatomical classification of neurons
C) Classification of neurons based upon size
D) none of these

Q.9 Number of spinal nerves in man.
A)31 pairs
B)32 pairs
C)12 pairs
D)29 pairs

Q.10 Cerebellum of brain is concerned with.
A) Balancing during sitting
B) Coordination of muscular movements
C) Balancing during active movement
D) Initiation of muscular contraction

Q.11 Sensory ganglion for reflex action is found in.
A) Dorsal root ganglion of spinal nerve
B) Ventral root of spinal nerve
C) Visceral organ
D) Gray matter of spinal cord

Q.12 Nervous coordination involves specialized cells or neurons linked together directly or via the central nervous system, to form network that connects the:
A) Receptor and neurons
B) Receptors and CNS
C) Receptors and Effectors
D) CNS and effectors

Q.13 The neurons has capacity to generate and conduct impulses which travel across the:
A) Synapse and pass from the receptors to effectors
B) Effectors and pass from the synapse to receptors
C) Synapse and pass from the effectors to receptor
D) Receptors and pass from the synapse to effectors

Q.14 The elements of nervous system which help in coordination are:
A) Receptors, neurons and effectors
B) Motor, sensory and associative neurons
C) CNS and PNS
D) Brian and spinal cord

Q.15 The receptors for smell, taste and for blood CO_2, blood oxygen, blood glucose, blood amino acids and blood fatty acids are:
A) Mechanoreceptors
B) Chemoreceptors
C) Nociceptors
D) Thermoreceptor

Q.16 The example of chemoreceptors is:
A) Eyes
B) Nose
C) Stray ending
D) Rods and cones

Q.17 **All are the examples of mechanoreceptors EXCEPT:**
A) Free nerve ending
B) Expanded tip ending
C) Stray ending
D) Rods and cones

Q.18 **It is an example of mechanoreceptors:**
A) Hypothalamus
B) Tongue
C) Expanded tip ending
D) Rods and cones

Q.19 **These respond to stimuli of light:**
A) Mechanoreceptors
B) Photoreceptors
C) Chemoreceptors
D) Undifferentiated ending

Q.20 **The receptors that receive stimuli of light are:**
A) Free nerve endinr,
B) Expanded tip endings
C) Rods and cones
D) Stray nerve ending

Q.21 **Impulse is sent by the motor neurons to the**
A) Receptors
B) Effectors
C) Muscles
D) Glands

Q.22 **The sensations of are detected by modified sensory neurons having naked nerve endings.**
A) Heat and cold
B) Pain and cold
C) Touch and pain
D) Pain and heat

Q.23 **The sensations of are detected by modified sensory neurons.**
A) Touch, pressure, heat, cold and pain
B) Touch, pressure, hearing, taste and pain
C) Hearing, taste, body position and smell
D) Pressure, pain, taste, touch and smell

Q.24 **Specialized cellular corpuscles detect the sensation of:**
A) Pressure, touch and pain
B) Pressure, heat and cold
C) Pressure, vision and hearing
D) Pressure, taste and touch

Q.25 **The chief structural and functional units of nervous system are**
A) Cell bodies
C) Axons
C) Neurons
D) Receptors & Effectors

Q.26 **_____play a vital role in the nutrition of neurons and their protection by myelin sheath.**
A) Soma
B) Cell body
C) Neuroglia
D) Dendrites

Q.27 **There are functional types of neurons.**
A) Two
B) Three
C) Four
D) Five

Q.28 **The of certain brain cells branch profusely, giving cell a tree like appearance.**
A) Axons
B) Cell bodies
C) Dendrites
D) Soma

Q.29 **Many granules are present in the:**
A) Cell body
C) Dendrites
C) Axon
D) Cell bodies and dendrites

Q.30 **The simple reflex circuit includes each of the four elements of a neural pathway which are respectively:**
A) Sensory neuron, associative neuron, motor neuron and muscles
B) Sensory neuron, motor neuron, associative neuron and glands
C) Sensory neuron, motor neuron, associative neuron and muscles
D) Associative neurons, sensory neurons, motor neurons and muscles

Q.31 **The sensory neurons 2 endings in the: has Pain Sensitive**
A) Joints
B) Ears
C) Skin
D) Nose

Q.32 **The sensory neurons has pai we ending in the skin and * Pain sensitive in the spinal cord. ——— leading**
A) Short fibre
B) Long fibre
C) Thick fibre
D) Thin fibre

Q.33 **The sensory neurons also make a Synapse on associative neurons not involved in the reflex that ca i to the brain: Try Signals**
A) Informing it of the danger
B) Informing it of the tranquil position
C) Informing it of the Situation
D) Informing it of the confusion

Q.34 Nerve impulse is a wave of electrochemical change, which travels along the length of the neuron involving across the cell.
A) Chemical] reactions and movement of elements
B) Chemical reactions and movement of molecules
C) Physical actions and movement of ions
D) Chemical reactions and movement of ions

Q.35 Human nervous system is a type of:
A) Diffused nervous system
B) Primitive nervous system
C) Centralized nervous system
D) Peripheral nervous system

Q.36 It conducts signals to and from the brain and controls reflex activities:
A) Brain
B) Spinal cord
C) CNS
D) PNS

Q.37 It carries from the CNS that control the activities of muscles and glands:
A) Sensory neurons
B) Associative neurons
C) Brain
D) Motor neurons

Q.38 It controls involuntary responses by influencing organs, glands and smooth muscles:
A) Somatic nervous system
B) Autonomic nervous system
C) Central nervous system
D) Peripheral nervous system

Q.39 The CNS consists of brain and spinal cord, which are both protected in:
A) Two ways
B) Three ways
C) Four ways
D) Five ways

Q.40 which is a part of skull, protects the brain.
A) Meninges
B) Cranium
C) CSF
D) Vertebral columns

Q.41 The brain and spinal cord are also protected by_____ layers of meninges.
A) Single
B) Double
C) Triple
D) Tetra

Q.42 Nerve cell do not divide because they do not have
A) Nucleus
B) Centrosomes
C) Mitochondria
D) Golgi apparatus

Q.43 Cerebrospinal fluid is similar in composition to:
A) Blood
B) Plasma
C) Serum
D) Lymph

Q.44 Random, uncontrolled activity of some cells in the brain leading to chaotic activity in both sensory and motor nerves causes patients of to see and hear different strange things:
A) Epilepsy
B) Alzheimer's Disease
C) Parkinson's Disease
D) Huntington's Disease

Q.45 Part of hind brain responsible for the balance and equilibrium of body is called:
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B) Pons
C) Cerebellum
D) Thalamus

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B) Spinal cord
C) Thalamus
D) Hypothalamus

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B) Epilepsy
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Q.50 _____ neurons carry signal from CNS to muscle and glands
A) Sensory
B) Motor
C) Associate
D) All of the above

Q.51 _____ nervous system dominates during rest and ruminations
A) Sympathetic
B) Autonomic
C) Parasympathetic
D) Somatic

Q.52 The gap between neurons and sarcolemma is:
A) Synapse
B) Neuromuscular junction
C) Synapses
D) Intercalated disc

Q.53 Sensory neuron enter the spinal cord through;
A) Dorsal root
B) Dorsal horn
C) Ventral root
D) Ventral horn

Q.54 The left cerebral hemisphere controls _____ side of the body
A) Right
B) Lateral
C) Left
D) None of the above

Q.55 Medulla controls
A) Breathing
B) Blood pressure
C) Heart rate
D) All of the above

Q.56 The cell membrane is virtually impermeable to all ions except:
A) Ca^{++}
B) Na^{+}
C) Mg^{++}
D) K^{+}

Q.57 The process of opening of Na^{+} gates and diffusion of Na^{+} into cell till the restoration of resting membrane potential takes:
A)1-2 milliseconds
B)3-4 milliseconds
C) 2-3 milliseconds
D) 1 milliseconds

Q.58 Which neurotransmitter is not involved in synaptic transmission within the brain and spinal cord?
A) Adrenaline
B) Serotonin
C) Dopamine
D) Acetylcholine

Q.59 Neurosecretory cells are present in:
A) Pons
B) Hypothalamus
C) Midbrain
D) Cerebellum

Q.60 It is the material in the brain & spinal cord which contains the axons and myelin sheathes of nerve cells:
A) White matter
B) Yellow matter
C) Gray matter
D) None of these

Q.61 Which structures would not be innervated by the sympathetic nervous system?
A) Skeletal muscles
B) Smooth muscles
C) Glands
D) Cardiac muscles

Q.62 The number of nerves in a human is:
A) 86
B) 33
C) 43
D) 12

Q.63 The CSF is similar in com position to:
A) Dialyzing fluid
B) Nucleus pulposus
C) Synovial fluid
D) Blood plasma

Q.64 The branch of the autonomic nervous system that induces the "flight or fight" response is the
A) Sympathetic
B) Vagus nerve
C) Parasympathetic
D) Somatic nerve

Q.65 Frequency of action potential (Impulse) is directly proportional to ___ stimulus;
A) Nature
B) Frequency
C) Intensity
D) Any of above

Q.66 There are no _____ in Hydra;
A) Neurons
B) Ganglia
C) Nerves
D) Both b & c

Q.67 Over-activity of sympathetic nervous system causes:
A) Disturbance of vision
B) Decrease in blood pressure
C) Constipation
D) Increase in heart rate

Q.68 Which structures respond when they are stimulated by impulse coming through neuron?
A) Receptors
B) Effectors
C) Responses
D) Transduction

Q.69 Respiratory center is located in:
A) Cerebrum
B) Medulla
C) Cerebellum
D) Hypothalamus

Q.70 A neurological condition characterized by involuntary tremors, diminished motor activity and rigidity is called:
A) Epilepsy
B) Alzheimer's disease
C) Parkinson's disease
D) Cerebellar tumors

Q.71 The number of cranial nerves in humans is:
A) 31 pairs
B) 24 pairs
C) 12 pairs
D) 62 pairs

Q.72 The part of brain which controls breathing, heart rate and swallowing is:
A) Cerebrum
B) Medulla
C) Cerebellum
D) Hypothalamus

Q.73 Cause of Parkinson's disease is death of brain cells that produce:
A) Dopamine
B) ADH hormone
C) Acetylcholine
D) Oxytocin

Q.74 Thalamus and cerebrum are the part of:
A) Spinal cord
B) hind brain
C) Fore brain
D) Mid brain

Q.75 There is also evidence that high levels of _____ may contribute to the onset of Alzheimer's disease:
A) Ca
B) Mo
C) Mg
D) Al

Q.76 L-dopa or Levo-dopa is used to get some relief from:
A) Epilepsy
B) Alzheimer's disease
C) Parkinson's disease
D) Dementia

Q.77 The right and left cerebral hemispheres are connected by a thick band of nerve fibers called:
A) Medulla
B) Pons
C) Corpus collasum
D) Hippocampus

Q.78 The part of the brain which guides smooth and accurate motions and maintains body position is called?
A) Cerebrum
B) Pons
C) Cerebellum
D) Medulla

Q.79 Which one of the following is the effect of sympathetic nervous system?
A) Constriction of bronchi
B) Promotes digestion or peristalsis
C) Decrease in heart rate
D) Dilates the pupil

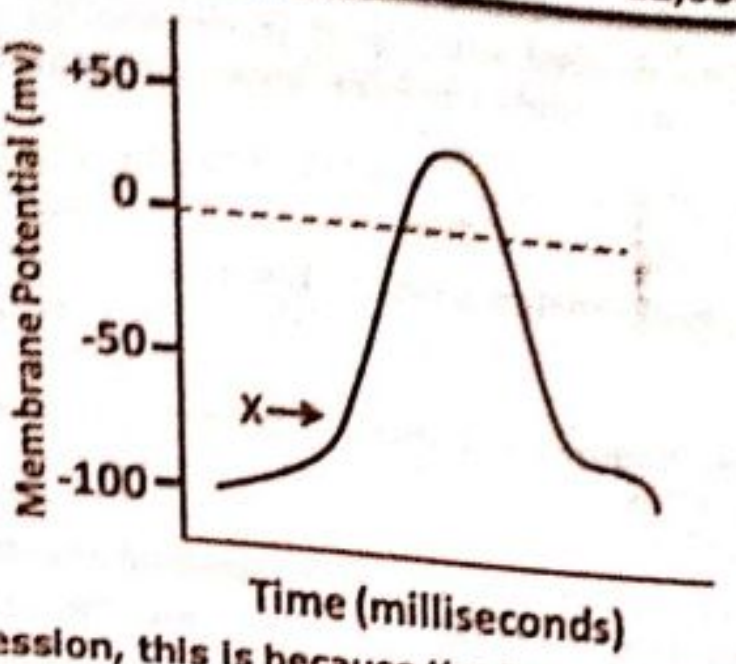
Q.80 High levels of aluminimum may contribute to the onset of which one of the following?
A) Parkinson's disease
B) Alzheimer's disease
C) Epilepsy
D) Gonorrhea

Q.81 Which disease is responsible for dementia (memory loss)?
A) Parkinson's disease
B) Epilepsy
C) Alzheimer's disease
D) Graves' disease

Q.82 Neurotransmitter secreted at synapse outside the central nervous system is:
A) Dopamine
B) Androgen
C) Polypeptide
D) Acetylcholine

Q.83 Conduction of action potentials from one node of Ranvier to another in myelinated neurons is through:
A) Hyperpolarization
B) Depolarization
C) Resting membrane potential
D) Saltatory conduction

Q.84 In the following diagram of action potential in a neuron, "x" depicts:
A) Depolarization
B) Repolarization
C) Polarization
D) Hyperpolarization



Q.85 **Fear can easily turn to aggression, this is because the two centers lie nearby in;**
A) Hypothalamus
B) Amygdala
C) Cerebral hemispheres
D) Medulla

Q.86 **Which one of the following ion cause depolarization of neuronal membrane**
A) Na
B) Ca
C) K
D) both a and b

Q.87 **The function of medulla is to control;**
A) Hearing
B) memory storage
C) Flight
D) Heart rate

Q.88 **What is not the effect of sympathetic nervous system;**
A) Whitening of skin
B) Constriction of bronchi
C) Inhibition of peristalsis
D) Contraction of spleen

Q.89 **Unidirectional transmission of nerve impulse through the nerve is due to fact of ___**
A) Nerve fiber is insulated by mylinated sheath
B) Sodium pump start operating only at the cyton and then continuous into the nerve fibers
C) Neurotransmitters are released from the dendrites and not by the axon
D) Neurotransmitters are released from axon endings not by dendrites

Q.90 **Which one of the following does not act as neurotransmitter**
A) Cortisone
B) Nor epinephrine
C) Epinephrine
D) adrenaline

Q.91 **Nessils granules are absent in**
A) Axon
B) Dendrites
C) cyton
D) Schwann cells

Q.92 **Nicotine mimics the effect of neurotransmitter;**
A) Acetyl choline
B) Nor-adrenaline
C) Morphine
D) Serotonin

Q.93 **Neurotransmitters are _____ in their nature;**
A) Neither ecitatory nor inhibitory
B) Inhibitory
C) Excitatory
D) Either excitatory or inhibitory

Q.94 **Which one of the following ion cause repolarization of neuronal membrane**
A) Na
B) Ca
C) K
D) both a and b

Q.95 **Receptor site for neurotransmitters are**
A) Presynaptic membrane
B) synaptic vesicles
C) Post synaptic membrane
D) tips of axon

Q.96 **The part of neuron which carry message away from cell body is:**
A) Dendron
B) Axon
C) Dendrite
D) Peripheral branch

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C) Cerebellum
D) Hypothalamus

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B) Vagus nerve
C) Parasympathetic
D) Somatic nerve

Q.108 The main neurotransmitter for synapses is _____ which lie outside the central nervous system.
A) Acetylcholine
B) Acetaldehyde
C) Choline
D) Phosphatidylcholine

Q.109 The reflex action is the phenomena which only involves.
A) Receptors and effectors
B) Brain receptors spinal cord
C) Receptors effectors and spinal cord
D) Receptors neurons brain

Q.110 In an action potential the permeability of sodium ions in the neurons increases due to.
A) Repolarization
B) The opening of sodium channels/gates
C) Sodium ions forming an ionic bonding
D) The action of the acetylcholinesterase enzyme

Q.111 Acetylcholine and noradrenaline are two types of _____ used in our nervous system.
A) Enzymes
B) Channel and carrier proteins in the cell membrane of a neurone
C)Neurotransmitters
D)Hormones

Q.112 If stimulation is above _____ impulses travel to the brain along the sensory neuron.
A) Recovery period
B) Action potential
C) Resting potential
D) Threshold

Q.113 When nerve impulse from one node of Ranvier to the next in a myelinated neuron its called.
A) Synapses
B) Resting potential
C)Saltatory conduction
D)Membrane Potential

Q.114 In nervous system chemical messengers are called.
A) Neurotransmitter's
B) Chemoreccptores
C) Hormones
D) Enzyme

Q.115 How many sodium ions are pumped out in response to two potassium ions transported into the membrane?
A) 2
B) 4
C) 3
D) 1

Q.116 Repolarization occurs when.
A) Na+ moves outside axon
B) Na+ moves inside axon
C) K+ moves outside axon
D) K+ moves inside axon

Q.117 During the transmission of nerve impulse through a nerve fibre the potential on the inner side of the plasma membrane has which type of electric charge.
A) First positive then negative and continue to be negative
B) First negative then positive and continue to be positive
C) First positive then negative and again back to positive
D) First negative then positive and again back to negative

Q.118 The diagram illustrates a nerve cell. It can be correctly identified as.

A) Sensory neuron
B) Motor neuron
C) Oligodendrocyte
D) Interneuron

Q.119 In central nervous system are found.
A) Motor and sensory neurons
B) Motor and intermediate neurons
C) Intermediate and secondary neurons
D) Only intermediate neurons

Q.120 Which of the following is the example of conditioned reflex?
A) Hand withdraws when pierid with a needle
B) Eyes closed when anything enter into it
C) During digestion food goes forward in alimentary
D) Trained dog salivates when you ring a bell

Q.121 The human hind brain comprises three parts one of which is.
A) Cerebellum
B) Hypothalamus
C) Spinal cord
D) Corpus callosum

Q.122 Selective weed killer
A) Naphthalene acetic acid
B) Indole propionic acid
C) 2,4 Dichloro phenoxy acetic acid
D) None of Ihese

Q.123 Which of the following plant hormones are commercially obtained from fungal cultures?
A) Gibberellins
B) Cytokinins
C) Abscisic acid
D) Ethene

Q.124 Which of the following statement is correct?
A) Pain receptors are nearly 27 times more abundant than cold receptors
B) pain receptors are nearly 10 time more abundant than cold receptors
C) pain receptors are nearly 27 times more abundant than temperature receptors
D) cold receptors are nearly 27 times more abundant than heat receptors

Q.125 The chief structural and functional units of the nervous system are
A) Neuroglia
B) Neurons
C) Schwann cells
D) both a and b

Q.126 Nissl's granules consists of
A) Ribosomes
B) Rough endoplasmic reticulum
C) Golgi apparatus
D) Both a and b

Q.127 Number of neurons involved in a reflex arc
A) 2
B) 3
C) 4
D) Many

Q.128 In the unstimulated state, a neuron has a membrane potential of approximately
A) + 70mV
B)-70mV
C) - 50 mV
D) + 50m V

Q.129 Under normal conditions a nerve impulse is initiated by an appropriate stimulus called
A) initiation stimulus
B) threshold stimulus
C) open stimulus
D) saltatory impulse

Q.130 One of the examples of the action of the autonomous nervous system is.
A) Swallowing of food
B) Peristalsis of the intestine
C) Pupillary reflex
D) Knee jerk response

Q.131 In the resting state of the neural membrane diffusion along to concentration gradients if allowed would drive.
A) K+ outof the cell
B) Na+ into the cell
C) K+ and Na+ out of the cell
D) Na+ out of the cell

Q.132 Unidirectional transmission of a nerve impulse through nerve fibre is due to the fact that.
A) Nervefibre is insulated by a medullary sheath
B) Sodium pump starts operating only at the cyton and then continues into the nerve fibre
C) Neurotransmitters are released by dendrites and not by axon endings
D) Neurotransmitters are released by the axon endings and not by dendrites

Q.133 The transmission of nerve impulse in the synaptic cleft is.
A) Chemical and unidirectional
B) Electrical and unidirectional
C) Chemical and bidirectional
D) Electrical and bidirectional

Q.134 Which of the following parts of a neuron is covered by fatty sheath?
A) Axon
B) Dendrite
C)Cyton
D)node of Ranvier

Q.135 Which of the following statements is true.
A) Saltatory conduction is seen in non-myelinated nerve fibres
B) Nissl's granules are found in muscles fibres
C) Non myelinated nerve fibres do not possess nodes of ranvier
D) Non myelinated nerve fibres are completely enclosed by myelin sheath

Q.136 Which part of the human brain is largest.
A) Cerebellum
B) Cerebrum
C) Thalamus
D) Medulla oblongata

Q.137 Which of the following does not act as a neurotransmitter?
A) Acetylcholine
B) epinephrine
C) Glutamic acid
D) Tyrosine

Q.138 Synapse is a microscopic gap between.
A) Consective neurons
B) Presynaptic neurons and postsynaptic neurons
C) axons and dendrites
D) All of these

Q.139 Inside of membrane becomes positive relative to the outside during
A) Active potential
B) Resting potential
C) Polarize potential
D) None of these

Q.140 Concentration of K^+ inside the membrane surface is
A) ten folds higher than outside
B) twenty folds higher than outside
C) thirty folds higher than outside
D) None of these

Q.141 Nervous system design is highly co - related with animal's
A) Life history
B) Life style
C) evolution
D) size And shape

Q.142 Which division of nervous system prepares the body for stressful and energetic activity' fight or flight"
A) Autonomic nervous system
B) Parasympathetic nervous system
C) Sympathetic nervous system
D) Peripheral nervous system

Q.143 The cell transmits impulses from the
A) effector organ to the spinal cord
B) receptor cells to the effector organ
C) receptor cells to the spinal cord
D) spinal cord to the effector organ

Q.144 Depolarization of an axon is produced by the movement of:
A) Na^+ into the axon and K^+ out of the axon.
B) Na^+ into the axon to bond with K^+
C) K^+ into the axon and Na^+ out of the axon
D) Na^+ and K^+ within the axon towards the axon terminal

Q.145 What will happen if the receptor sites on the post-synaptic membrane are blocked by a drug at the neuromuscular junction?
A) inhibition of acetylcholine
B) inhibition of cholinesterase
C) muscle contraction
D) muscle paralysis

Q.146 Which of these are the first and last elements in a spinal reflex?
A) axon and dendrite
B) sense organ and muscle effector
C) ventral horn and dorsal horn
D) motor neuron and sensory neuron

Q.147 Impulses travel very rapidly along nerves to the leg of a man. Which fact accounts for the speed at which they travel?
A) a nerve impulse is an all or none phenomenon
B) the nerves contain myelinated fibres
C) there is a high concentration of Na^+ ions inside the axons
D) there is a potential difference across the axon membranes

Q.148 Where are neurotransmitter receptors located?
A) on the nuclear membrane
B) at nodes of Ranvier
C) on the postsynaptic membrane
D) in the myelin sheath

ANSWERS

1.	B	2.	B	3.	A	4.	B	5.	C	6.	A	7.	A	8.	A
9.	A	10.	C	11.	A	12.	C	13.	A	14.	A	15.	B	16.	B
17.	D	18.	C	19.	B	20.	C	21.	B	22.	C	23.	A	24.	B
25.	B	26.	C	27.	B	28.	C	29.	D	30.	A	31.	C	32.	B
33.	A	34.	D	35.	C	36.	B	37.	D	38.	B	39.	B	40.	B
41.	C	42.	B	43.	B	44.	A	45.	C	46.	D	47.	D	48.	D
49.	B	50.	B	51.	C	52.	B	53.	A	54.	A	55.	D	56.	D
57.	C	58.	D	59.	B	60.	A	61.	A	62.	A	63.	D	64.	A
65.	C	66.	D	67.	D	68.	B	69.	B	70.	C	71.	C	72.	B
73.	A	74.	C	75.	D	76.	C	77.	C	78.	C	79.	D	80.	B
81.	C	82.	D	83.	D	84.	A	85.	B	86.	A	87.	D	88.	D
89.	D	90.	A	91.	A	92.	A	93.	D	94.	C	95.	C	96.	B
97.	B	98.	A	99.	A	100.	C	101.	D	102.	D	103.	B	104.	B
105.	B	106.	C	107.	A	108.	A	109.	C	110.	B	111.	C	112.	D
113.	C	114.	A	115.	C	116.	C	117.	D	118.	A	119.	D	120.	D
121.	A	122.	C	123.	A	124.	A	125.	B	126.	D	127.	A	128.	B
129.	B	130.	B	131.	A	132.	D	133.	A	134.	A	135.	A	136.	B
137.	C	138.	D	139.	A	140.	B	141.	C	142.	C	143.		144.	C
145.	A	146.	D	147.	A	148.	D	149.	C	150.		151.		152.	

Q.1 **Body cavity of round worms is called:**
A) Pseudocoelom
B) Coelom
C) Acoelom
D) Enteron

Q.2 **The cavity between body wall and alimentary canal is:**
A) Pseudocoelom
B) Acoelom
C) Coelom
D) Gastrovascular cavity

Q.3 **In arthropods, the body cavity is in the form of:**
A) Coelom
B) Haemocoel
C) Pseudocoelom
D) Enteron

Q.4 **In radial symmetry all body parts are arranged around the central axis. Radial symmetry represents _____ mode of life:**
A) Sessile
B) Streamlined
C) Active
D) Parasitic

Q.5 **All of the animals of Grade Radiata are**
A) Diploblastic
B) Triploblastic
C) Pseudocoelomates
D) Coelomates

Q.6 **All the animals included in grade Bilateria are**
A) Diploblastic
B) Unicellular
C) Both 'a' & 'b'
D) Triploblastic

Q.7 **Pseudocoelom is the characteristic feature of the phylum:**
A) Annelida
B) Nematoda
C) Mollusca
D) Echinodermata

Q.8 **Coelomates include animals from:**
A) Nematodes to chordates
B) Annelids to chordates
C) Molluscs to chordates
D) Cnidarians to chordates

Q.9 **_____ lack symmetry:**
A) Sponges
B) Echinoderms
C) Hydra
D) Mammals

Q.10 **Grade Radiata includes only one phylum and that is:**
A) Porifera
B) Platyhelminthes
C) Cnidaria
D) Echinodermata

Q.11 **All are symmetric except**
A) Sycon
B) Obelia
C) Planarian
D) Hydra

Q.12 **Bilateral symmetry, segmentation, coelom and open circulatory system are the features of:**
A) Annelida
B) Arthropoda
C) Mollusca
D) Echinodermata

Q.13 **The nematodes are:**
A) Triploblastic
B) Bilaterally symmetrical
C) Pseudocoelomates
D) All the above

Q.14 **Haemolymph is the feature of which of the following?**
A) Cnidaria
B) Platyhelminthes
C) Aschelminthes
D) Arthropoda

Q.15 **Bilateral symmetry is considered to be an adaptation for**
A) Survival
B) Motility
C) Nutrition
D) None of these

Q.16 **True coelom is lined by**
A) Ectoderm
B) Mesoderm
C) Endoderm
D) Both 'a' & 'b'

Q.17 **Tube within a tube plan is exhibited by**
A) Acoelomates
B) Pseudocoelomates
C) Coelomates
D) All the above

Q.18 **Acoelomates belong to phylum**

A) Aschelminthes
B) Platyhelminthes
C) Porifera
D) Cnidaria

Q.19 Fomation of body cavity or coelom due to splitting of mesoderm is termed as
A) Enterocoelous
B) Schizocoelous
C) Archenteron
D) both a and c

Q.20 Which of the following statement is true about protostomes
A) cleavage is radial and indeterminate
B) mesoderm is derived from the wall of gut
C) coelom is developed as an outpouching of archeteron
D) mouth arise from blastopore

Q.21 Diploblastic animals belong to division
A) bilalaria
B) radiata
C) both a and b
D) none of these

Q.22 In acoelomates the well developed system is
A) transport system
B) excretory system
C) nervous system
D) both b and c

Q.23 Which of the following phyla have triploblastic organization;
A) Protozoa
B) Coelentrata
C) Echinodermata
D) All of these

Q.24 The parietal layer of mesoderm in coelomates underlines;
A) Endoderm
B) Gut wall
C) Body wall
D) Visceral organs

Q.25 Animals included in grade bilateriaare;
A) Coelomates
B) triploblastic
C) Diploblastic
D) All of these

Q.26 All animals are
A) autotrophs
B) heterotrophs
C) unicellular
D) Mollusca

Q.27 Which of the following is not included in grade bilatria
A) cnidarians
B) nematodes
C) annelids
D) molluscs

Q.28 Which of the following class of animals includes the first vertebrates to - accea, on Earth?
A) agnatha, the jawless fishes
B) Chondrichthyes, the sharks
C) Osteichthyes, the bony fishes
D) tunicates, the sea squirts

Q.29 Which of these does not pertain to a protostome?
A) spiral cleavage
B) blasto pore—anus
C) schizocoel
D) Annelida

Q.30 Sponges belong to the phylum.
(A) aschelminths
B) Arthropoda
C) porifera
D) Mollusca

Q.31 Which of the following is not a parasite
A) Annelida
B) nematode
C) Platyhelminthes
D) porifera

Q.32 Which of the following most clearly demonstrates the evolutionary relatcrs7: between annelids and arthropods?
A) a complete digestive tract
B) an exoskeleton
C) radial symmetry
D) body segments

Q.33 Reptiles are much more extensively adapted to life on land than amphibians that reptiles
A) have shelled eggs.
B) have a complete digestive tract
C) are endothermic
D) go through the larva stage

Q.34 Amphibians arose from

A) cartilaginous fish
B) jawless fish
C) ray finned
D) bony fishes with lungs

Q.35 Which of these does not pertain to a deuterostome?

A) Blastopore is associated with the anus
B) spiral cleavage
C) enterocoelom
D) echinoderms and chordates

Q.36 Which of the following has a gastrovascular cavity?

A) sponges
B) earthworms
C) roundworms
D) flatworms

Q.37 Which of the following is not a subphylum of chordata

A) hemichordate
C) cephalochordate
B) urochordata
D) vertebarta

ANSWERS

1.	A	2.	C	3.	B	4.	A	5.	A	6.	D	7.	B	8.	B
9.	A	10.	C	11.	A	12.	B	13.	D	14.	D	15.	B	16.	B
17.	B	18.	B	19.	C	20.	d	21.	B	22.	D	23.	C	24.	C
25.	C	26.	B	27.	A	28.	A	29.	B	30.	C	31.	D	32.	B
33.	A	34.	D	35.	B	36.	D	37.	A	38.		39.		40.	

Q.1 The modern theory of evolution is;
A) Lamarkism
B) Neo-Darwiniam
C) Darwinism
D) Mendalism

Q.2 The role played by the environment that leads to change in frequency of alleles is;
A) Genetic drift
B) Selection
C) Non-random mating
D) All of these

Q.3 Gene pool consists of all alleles at all gene loci in all individuals of the:
A) Family
B) Population
C) Clan
D) Community

Q.4 In man the vestigial organs are:
A) Ear muscles
B) Coccyx
C) Nictitating membrane
D) All a, b, c

Q.5 Two populations of a given species will only evolve into two distinct species if they are subjected to:
A) Geographical isolation
B) Genetic isolation
C) Disruptive section
D) Stabilizing selection

Q.6 Lamarck believed that the changes made due to the use and disuse of organs would
A) Last only in that generation
B) do not last at all
C) last generation after generation
D)May be A or B

Q.7 The most common form that does not alter allele frequency, but lessens the proportion of heterozygote individuals is:
A) Inbreeding
B) Random breeding
C) Crossbreeding
D) Breeding

Q.8 It was the geographical distribution of species that first suggested the idea of evolution to:
A) Charles Darwin
B) Carolus Linnaeus
C) Alfred Wallace
D) J.B. Lamarck

Q.9 Jean Baptiste Lamarck published his theory of evolution in:
A) 1757
B) 1859
C) 1809
D) 1945

Q.10 Darwin is associated with
A) Natural selection
B) Inorganic evolution
C) Mutation
D) All the above

Q.11 Darwin's theory, as presented in 'The Origin of Species', mainly concerned:
A) How new species arise
B) How adaptations evolve
C) The origin of life
D) How extinction occurs

Q.12 Charles Darwin gave the:
A) Theory of special creation
B) Inheritance of acquired characters
C) Theory of Natural selection
D) Cell theory

Q.13 According to Lamarck, evolution is towards:
A) Increase in size
B) Decrease in complexity
C) Decrease in size
D) Both 'a' & 'b'

Q.14 "An organism can pass on characteristics that it acquired during its lifetime to its offspring". This idea is:
A) Inheritance of acquired characters
B) Darwinism
C) Lamarckism
D) Both 'a' & 'b'

Q.15 The parts of the body used extensively to cope with the environment become larger and stronger, while those that are not used deteriorate was argued by:
A) Charles Darwin
B) Carolus Linnaeus
C) Alfred Wallace
D) J.B. Lamarck

Q.16 Natural selection can amplify or diminish only those variations that are:
A) Non-heritable
B) Both a & b
C) Heritable
D) None

Q.17 How many species of Galapagos finch are there?
A) 1
B) 13
C) 7
D) 28

Q.18 Production of several different species from a common ancestor:
A) Natural selection
B) Parallel evolution
C) Vestigial structures
D) Adaptive radiation

Q.19 Lamarck reasoned about the evolved neck of the giraffes as the _____ of a great many generations of ancestors stretching higher and higher:
A) Combined effort
B) Selective effort
C) Evolutionary product
D) Cumulative product

Q.20 Darwin suggested that populations of individual species become better adapted to their local environments through:
A) Evolution
B) Inherited characters
C) Natural selection
D) All the above

Q.21 Production of more individuals than environment can support leads to a struggle for existence among individuals of a:
A) Generation
B) Population
C) Species
D) Community

Q.22 Species are product of:
A) Their parents
B) Individuals
C) Populations
D) Evolution

Q.23 An example of adaptive radiation would be:
A) The peppered moth
B) Domestic dogs
C) The cheetah
D) Darwin's finches

Q.24 Darwin gave the idea of:
A) Natural selection
B) Special creation
C) Descent with modification
D) Both 'a' & 'b'

Q.25 Key point of Lamarck's view about organic evolution is that every offspring
A) Is similar to its parents
B) Inherits characters acquired by the parental generation
C) Shows struggle for existence
D) Repeats phylogeny in its ontogeny

Q.26 Which of the following is not an assumption of the Hardy-Weinberg equilibrium?
A) Mating occurs preferentially
B) There is no migration
C) The size of the population is large
D) There are no mutations

Q.27 In a population of red (dominant allelB) or white flowers, the frequency of red flowers is 91%. What is the frequency of the red allele?
A) 9%
B) 91%
C) 30%
D) 70%

Q.28 Which of the following describes gene flow?
A) Random mating
B) Genetic drift
C) Migration
D) Selection

Q.29 The Hardy-Weinberg law states that an equilibrium of allele frequencies in a gene pool will remain in effect in each succeeding generation of a sexually reproducing population as long as _____ conditions are met:
A) One
B) Five
C) Three
D) Seven

Q.30 What is the frequency of the dominant allele in a population of 100 individuals with the following genotypes: 30 BB, 60 Bb, 10 bb?
A) 0.2
B) 0.6
C) 0.4
D) 0.8

Q.31 The parts of the body use extensively to cope with the environment become larger and stronger, while those that are not used deteriorate was argued by:
A)Charls Darwin
B)Carolus Linnaeus
C) Alfred Wallace
D)Lamarck

Q.32 Which of the following mammals are armored that live only in America;
A) Monkey
B) Armadillos
C) Humans
D) Apes

Q.33 Using the Hardy-Weinberg Principle, which expression represents the frequency of homozygous recessive genotype?

A) p^2 C) q^2
C) 2Pq C) q

Q.34 The process of --- and------- generate variation, and — produces adaptation to the environment

A) sexual recombination ----- natural selection —mutation
B) genetic drift--mutation ---- sexual recombination
C) mutation sexual recombination --natural election
D) mutation — natural selection----genetic drift

Q.35 Natural selection is sometimes described as "survival of the fittest." Which of the following most accurately measures an organism's fitness?

A) its mutation rate
B) how many fertile offspring it produces
C) its ability to withstand environmental extremes
D) how much food it is able to make or obtain.

Q.36 The smallest biological unit that can evolve over time is

A) a specie C) an ecosystem
C) an individual organism D) A population

Q.37 Which of the following ideas is common to both Darwin's and Lamarck's theories of evolution?

A) Adaptation results from different reproductive success.
B) Evolution drives organisms to greater and greater complexity.
C) Evolutionary adaptation results from interactions between organisms and their environment.
C)The fossil record supports the view that species are fixed.

Q.38 Which of the following pairs of structures is least likely to represent homology?

A) the wings of a bat and the forelimbs of a human
C) the haemoglobin of a baboon and that of a gorilla ,
C) the brain of a cat and that of a dog
D) the wings of a bird and those of an insect

Q.39 All organisms share the same genetic code. This commonality is evidence that

A) evolution is occurring now
C) convergent evolution has occurred
C) all organisms are descended from a common ancestor
D) evolution occurs gradually

ANSWERS

1.	B	2.	B	3.	B	4.	D	5.	A	6.	C	7.	A	8.	B
9.	C	10.	A	11.	A	12.	C	13.	A	14.	D	15.	D	16.	C
17.	B	18.	D	19.	D	20.	C	21.	B	22.	D	23.	D	24.	D
25.	B	26.	A	27.	D	28.	C	29.	B	30.	B	31.	D	32.	B
33.	C	34.	C	35.	B	36.	D	37.	C	38.	D	39.	C	40.	

LIFE PROCESS IN ANIMAL AND PLANT (nutrition, gaseous exchange and transport)

Q.1 The numer of A-V valves in human heart is:
A) 1
B) 3
C) 2
D) 4

Q.2 Blood returning to the mammalian heart in a pulmonary vein drains first into the
A) Left atrium
B) Left ventricle
C) Right atrium
D) Right ventricle

Q.3 Atrioventricular diastole takes:
A) 1sec
B) 0.4 sec
C) 0.8sec
D) 0.1 sec

Q.4 ECG helps to diagnose the abnormalities in:
A) The rhythmicity of the heart
B) Structure of the heart
C) The conduction system of the heart
D) Both 'a' & 'b'

Q.5 ECG helps to diagnose the abnormalities in:
A) The rhythmicity of the heart
B) Structure of the heart
C) The conduction system of the heart
D) Both 'a' & 'b'

Q.6 The pH of the blood is:
A) 8
B) 7.4
C) 7.6
D) 7

Q.7 In cardiac muscles successive cells are separated by junction called
A) Sarcoplasm
B) Intercalated disc
C) Internodes
D) both b & c

Q.8 Hepatic portal vein is formed by many veins collecting deoxygenated blood from different parts of alimentary canal, pass the blood to
A) inferior vana cava
B) right atrium
C) liver
D) kidney

Q.9 Atrioventricular Valve present b/w right atrium and right ventricle is
A) Tricuspid
B) Bicuspid
C) Semilunar
D) None of these

Q.10 The sequence of events which take place during the completion of one heart – beat is termed as
A) A trial systole
B) Ventricular systole
C) Diastole
D) Cardiac cycle

Q.11 The relaxed period of heart chambers is called
A) A trial diastole
B) Ventricular diastole
C) Diastole
D) All a, b and c

Q.12 Duration of one complete heart beat is
A) 1 sec
B) 0.9 sec
C) 0.8 sec
D) 0.7 sec

Q.13 Sino – a trial node is present at
A) right atrium
B) left atrium
C) upper end of right atrium
D) upper and left atrium

Q.14 Wave of blood pressure or pulse due to heartbeat can be detected in
A) Arteries
B) Veins
C) Capillaries
D) All a, b and c

Q.15 The pressure within capillaries causes a continuous leakage of fluid from the blood plasma into the spaces that surround the capillaries and tissues. This fluid is known as
A) Lymph
B) Intra cellular
C) Interstitial fluid
D) All a, b and c

Q.16 Discharge of blood from blood vessels is known as
A) Myocardial infarction
B) Cerebral infarction
C) Stroke
D) Hemorrhage

Q.17 Which one is correct regarding electrocardiograph (ECG).
A) P-wave represents the electrical excitation of the ventricle
B) QRS complex represents repolarisation of theventricles
C) T-wave represents repolarisation of the atria
D) By counting the number of QRS complexes one can determine the pulse rate

Q.18 **The opening between the right atrium and the right ventricle is guarded by the valve named.**
A) Bicuspid valve
B) Mitral valve
C) Tricuspid valve
D) Semilunar valve

Q.19 **Which one of the following is a matching pair.**
A) Lubb sharp closure of AV valves at the beginning of ventricular systole
C) sudden opening of Semilunar valves at the beginning of ventricular diastole
B) Pulsation of the radial artery valves in the blood vessels
D)Initiation of the heart beatpurkinjefibres

Q.20 **The component of blood which prevents its coagulation in the blood vessels is.**
A) Haemoglobin
B) Thrombin
C) Plasma
D) Heparin

Q.21 **All veins carry deoxygenated blood except**
A) Pulmonary vein
B) Umbilical vein
C) Jugular vein
D) both a & b

Q.22 **The weight of blood in our body is about _____ of our body weight**
A) 1 / 10^{th}
B) $1/11^{th}$
C) 1 / 12^{th}
D) $1/13^{th}$

Q.23 **Total number of semi-lunar valves in heart is:**
A) 2
B) 4
C) 3
D) 5

Q.24 **Bicuspid valve is present:**
A) Between right atrium & right ventricle
B) Between right atrium & left atrium
C) Between left atrium & left ventricle
D) Between left atrium & right ventricle

Q.25 **Tricuspid valve is found in between**
A) Sinus venosus and right auricle
B) Left ventricle and left auricle
C) Right auricle and right ventricle
D) Ventricle and aorta

Q.26 **The lymph serves to:**
A) Return the interstitial fluid to the blood
B) Transport CO_2 to the lungs
C) Return the WBCs and RBCs to the lymph nodes
D) Transport O_2 to the brain

Q.27 **Which one is made up of myofibrils and myofilaments?**
A) Epicardium
B) Endocardium
C) Myocardium
D) All of the above

Q.28 **Which one is not the membrane of the heart?**
A) Epicardium
B) Endocardium
C) Myocardium
D) Pericardium

Q.29 **What is the function of valves in the heart?**
A) They separate the two ventricles
B) They open between heartbeats
C) They prevent blood from flowing backward
D) They help pump the blood

Q.30 **Where does blood go when it leaves the left ventricle?**
A) To the left atrium
B) To the lungs
C) To the right ventricle
D) To the rest of the body

Q.31 **Which statement about red blood cells is not correct?**
A) They have no nucleus
B) They carry hemoglobin
C) They have no organelles
D) They are produced by stem cells in bone marrow

Q.32 **What two body systems are white blood cells part of?**
A) Circulatory & immune systems
B) Respiratory & lymphatic systems
C) Circulatory & respiratory systems
D) Integumentary & immune systems

Q.33 **What is not a part of the lymphatic system?**
A) Spleen
B) Lymph vessels
C) Red blood cells
D) Nodes

Q.34 **What term refers to the fluid that leaks out of blood vessels into spaces between cells?**
A) Lymph
B) Plasma
C) Interstitial fluid
D) Blood

Q.35 What is the function of lymph nodes?
A) They filter nutrients out of the lymph and send them to the cells
B) They work with skeletal muscles to move the lymph
C) They recycle old red blood cells
D) They filter bacteria, viruses, fungi, and cell fragments out of the lymph

Q.36 Which of the following structures of the lymphatic system causes the maturation of T lymphocytes?
A) Thymus
B) Tonsils
C) Spleen
D) Lymph nodes

Q.37 Heart is supplied with blood with
A) Inferior vena cava
B) Pulmonary vein
C) Superior vena cava
D) All the above

Q.38 Number of RBC's formed and destroyed every second in a normal person is
A) 5 - 10 M
B) 4 - 10 M
C) 3 - 10 M
D) 2 - 10 M

Q.39 Most of the plasma proteins are synthesized in
A) Liver
B) Lymph nodes
C) Bone marrow
D) Pancrease

Q.40 The normal pH of human blood is
A) 7. 1
B) 7.2
C) 7.3
D) 7.4

Q.41 Which of the following protein act as a catalyst in blood clotting process?
A) Prothrombin
B) Fibrinogen
C) Albumin
D) Both a & b

Q.42 Which of the following organic nutrient in the blood serves as a precursor of steroid hormone?
A) Phospholipid
B) Cholesterol
C) Lactic acid
D) Both a & b

Q.43 Which of the following is incorrect about "ERYTHROCYTES"?
A) Once mature do not divide
B) formed in red bone marrow
C) Biconvex and have elastic plasma membrane
D) all a, b and c

Q.44 The valves present in the veins are:
A)Semi-lunar
B)Bicuspid
C)Tricuspid
D)Aortic

Q.45 The systolic pressure in normal individuals is:
A) 75-85 mm Hg
B) 80-110 mm Hg
C) 110 mm Hg
D) 120 mm Hg

Q.46 Thrombus is a solid mass of blood constituents in:
A) Brain
B) Heart
C) Blood vessel
D) All the above

Q.47 Blood flow speed in capillaries is less than _____ per second:
A)5mm
B)10mm
C)1mm
D)2mm

Q.48 Arteries that supply blood to heart wall are called:
A) Femoral
B) Cardiac
C) Coronary
D) Renal

Q.49 The thickest layer in the heart wall is:
A) Epicardium
B) Pericardium
C) Endocardium
D) Myocardium

Q.50 **The inferior vena cava brings blood from the lower regions of the body and empties into the**
A) Left atrium
B) Left ventricle
C) Right atrium
D) Right ventricle

Q.51 **Mitral valve is attached to papillary muscles which are extensions of:**
A) Right Atrium
B) Right ventricle
C) Left Atrium
D) Left ventricle

Q.52 **The medium which carriers dissolved substances (e.g. glucose B) from a capillary in a muscle to a cell in the muscle is**
A) Plasma
B) Tissue fluid
C) Lymph
D) serum

Q.53 **Number of Leucocytes in a cubic millimeter of blood is**
A) 7000 to 8000
B) 7500 to 8000
C) 7500 to 8500
D) 7000 to 8500

Q.54 **Thickening of arteries due deposition is.**
A) Arteriosclerosis
B) Blood pressure
C) Rheumatic heart
D) Cardiac arrest

Q.55 **All veins carries deoxygenated blood except.**
A) Pulmonary veins
B) Hepatic portal vein
C) Hepatic vein
D) Renal artery

Q.56 **First heart sound is.**
A) Lubb sound at the beginning of ventricular systole
B) Dup sound at the beginning of ventricular systole
C) Lubb sound at the end of systole
D) Dup sound at the beginning of ventricular systole

Q.57 **What is the function of pace maker?**
A) To decrease heart beat
B) To initiate heart beat
C) To increase heart beat
D) To control blood supply in heart

Q.58 **Oxygenated blood is carried by.**
A) Pulmonary artery
B) Renal vein
C) Pulmonary vein
D) Hepatic portal vein

Q.59 **Approximate diameter of RBC is**
A) 7μ m
B) 8 μ m
C) 9 μ m
D) None of these

Q.60 **A substance that inhibit blood clotting is**
A) Histamin
B) Heparin
C) Interferon
D) All a, b and c

Q.61 **Colloidal osmotic pressure of the blood, maintained by fibrinogen is about**
A) 75%
B) 25%
C) 0%
D) 100%

Q.62 **Papillary muscles are found in.**
A) Pylorus in vertebrate stomach
B) Eye orbit of mammals
C) Dermis of mammalian skin
D) Ventricle in mammalian heart

Q.63 **The word bicuspid is used for.**
A) Muscle in upper arm
B) Valve in heart and surface of teeth in mammals
C) Muscle in upper arm and valve in heart
D) Valve in heart and bone of pelvic girdle

Q.64 **Mature mammalian red blood cells do not have:**
A) Nucleus
B) Fluids
C) Red color
D) Haemoglobin

Q.65 **In a normal person plasma constitutes about _____ by volume of blood:**
A) 50%
B) 45%
C) 60%
D) 55%

Q.66 Which vein has oxygenated blood?
A) Renal vein
B) Pulmonary vein
C) Subclavian vein
D) Jugular vein

Q.67 The average life span of red blood cell is about:
A) Two months
B) One month
C) Five months
D) Four months

Q.68 The lymphatic vessels of the body empty the lymph into blood stream at the:
A) Bile duct
B) Subclavian vein
C) Abdominal vein
D) Jugular vein

Q.69 Right atrium is separated from right ventricle by:
A) Semilunar valve
B) Bicuspid valve
C) Tricuspid valve
D) Septum

Q.70 Histamine is produced by which one of the following cells?
A) Basophils
B) Monocytes
C) Platelets
D) Eosinophils

Q.71 Which one of the following is the most numerous/commonest white blood cells?
A) Eosinophils
B) Neutrophils
C) Monocytes
D) Lymphocytes

Q.72 The oxygenated blood from lungs to heart is transported the:
A) Pulmonary artery
B) Pulmonary vein
C) Coronary artery
D) Hepatic artery

Q.73 Which one of the following proteins takes part in blood clotting?
A) Pepsinogen
B) Immunoglobulin
C) Fibrinogen
D) Globulin

Q.74 The flaps of tricuspid valves are attached to the muscular extensions of right ventricle known as:
A) Smooth muscles
B) Intercoastal muscle
C) Papillary muscles
D) Skeletal muscles

Q.75 One complete heart beat consists of one systole and one diastole and lasts for about:
A) 0.8 sec
B) 0.4 sec
C) 02 sec
D) 0.5 sec

Q.76 The heart beat cycle starts when electric impulses are generated from:
A) AV node
B) SA node
C) SV node
D) PQ node

Q.77 Granulocytes are:
A) Monocytes, Eosinophils, Basophils
B) Neutrophils, Eosinophils, Basophils
C) Basophils, Macrophages, Neutrophils
D) Monocytes, Macrophages, Basophils

Q.78 Chordae tendineae are fibrous cords attached with:
A) Cardiac end of stomach valve
B) Pyloric sphincter of stomach
C) Tricuspid valve of heart
D) Eyelid

Q.79 Bicuspid valve controls the flow of blood from:
A) Right atrium to right ventricle
B) Left ventricle to aorta
C) Right ventricle to pulmonary artery
D) Left atrium to left ventricle

Q.80 Condition which leads to heart attack:
A) Arteriosclerosis
B) Hypertension
C) Atherosclerosis
D) Obesity

Q.81 The rhythmic beating of cardiac muscle in the mammalian heart is initiated by the.
A) atrio-ventricular node
C) Purkinje tissue
B) parasympathetic nervous system
D) sino-atrial node

Q.82 A red blood cell, entering the right side of the heart, passes by or through the following structures:
A) atrioventricular valve
B) right atrium
5. Pulmonary trunk
C) semilunar valve
D) right ventricle

Q.83 In which order will the red blood cell passes the structures?

A) 2 → 3 → 1 → 4 → 5
B) 3 → 1 → 4 → 2 → 5
C) 3 → 5 → 1 → 2 → 4
D) 5 → 3 → 1 → 4 → 2

Q.84 What produces systolic blood pressure?

A) contraction of the right atrium
B) contraction of the right ventricle
C) contraction of the left atrium
D) contraction of the left ventricle

Q.85 Human heart is

A) myogenic
B) neurogenic
C) cardiogenic
D) digeni

Q.86 Typical lub-dub sounds heard in heart in heartbeat are due to

A) closing of bicuspid and tricuspid valves.
B) closing of semilunar valves
C) blood under pressure through aorta.
D) closure of bicuspid —tricuspid valves followed by semilunar valves.

Q.87 Bicuspid valve connects

A) left atrium and left ventricle
B) left atrium and right ventricle
C) right atrium and left ventricle
D) right atrium and right ventricle

Q.88 Pacemaker is situated in heart

A) in the wall of right atrium
B) on interauricular septum
C) on interventricular septum
D) in the wall of left atrium

Q.89 Lymph returns to blood

A) oxygen
B) carbon dioxide
C) interstitial fluid
D) white blood cells

Q.90 Lymph most closely resembles which of the following?

A) blood
B) urine
C) water
D) interstitial flu

Q.91 Which of these factors has little effect on blood flow in arteries?

A) total cross sectional area of vessels
B) blood pressure
C) skeletal muscle contraction
D) heartbeat

Q.92 The Sino Atrial node (SA node)

A) regulates the rhythm of contraction
B) is also called AV node
C) regulates the rate of contraction
D) is also called bundle of His

ANSWERS

1.	C	2.	A	3.	B	4.	D	5.	D	6.	B	7.	B	8.	C
9.	A	10.	D	11.	C	12.	C	13.	C	14.	A	15.	C	16.	D
17.	D	18.	C	19.	C	20.	A	21.	D	22.	C	23.	A	24.	C
25.	C	26.	A	27.	C	28.	D	29.	C	30.	D	31.	C	32.	A
33.	C	34.	C	35.	D	36.	A	37.	D	38.	D	39.	A	40.	D
41.	A	42.	B	43.	C	44.	A	45.	C	46.	D	47.	C	48.	C
49.	D	50.	C	51.	C	52.	B	53.	A	54.	D	55.	A	56.	A
57.	B	58.	C	59.	B	60.	B	61.	C	62.	D	63.	B	64.	A
65.	D	66.	B	67.	D	68.	B	69.	C	70.	A	71.	B	72.	B
73.	C	74.	C	75.	A	76.	B	77.	B	78.	C	79.	D	80.	C
81.	D	82.		83.	D	84.	D	85.	D	86.	A	87.	A	88.	
89.		90.	D	91.		92.		93.		94.		95.		96.	

Q.1 Movement of water molecules from the region of high water potential the region to low Water potential is known as
A) Osmosis
B) Diffusion
C) Facilitated Diffusion
D) Active transport

Q.2 Stomata are more widely open in.
A) Green light
B) Yellow light
C) Blue light
D) far red light

Q.3 The volume of dry seed may increase upto 200 times by
A) Diffusion
B) Imbibition
C) Osmosis
D) Active transport

Q.4 _____ is incorrect about guard cells
A) Have chloroplast
B) Bean shaped
C) Connect to sounding cells by plasmodesmata
D) mosophyll cells

Q.5 Daily rhythmic opening and closing of stomata is
A) Internal clock
B) Both a & b
C) External clock
D) none

Q.6 The shrinkage of protoplasm of a cell
A) Deplasmolysis
B) Qutition
C) Incipient plasmolysis
D) Plasmolysis

Q.7 Translocation of organic materials is best explained by.
A) imbibitions theory
B) Mass flow hypothesis
C) Active transport
D) Transpiration pull

Q.8 Roots hair are extensions of
A) Epidermis
B) Both a and b
C) Cortex
D) None of these

Q.9 Loss of water through hydathodes:
A) Imbibition
B) bleeding
C) Guttation
D) Transpiration

Q.10 The surface are provided by roots hairs is about
A) 57%
B) 67%
C) 77%
D) 100%

Q.11 Which of the following factor is not involved in determining the rate of absorption of each mineral by roots?
A) its concentration both inside and outside root
B) the ease with which it can passively penetrate cell membrane
C) extent of active absorption
D) None of these

Q.12 Temperature causes closure of stomata
A) 30-40 ^{0}C
B) 25-35 ^{0}C
C) 30-35 ^{0}C
D) 40-45 ^{0}C

Q.13 Casparian strips are present is
A) Epidermis
B) Cortex
C) Endodermis
D) Pericycle

Q.14 The few drops on the tip of the Grass Leaves involves the phenomenon
A) Imbibition
B) Guttation
C) Bleeding
D) Transpiration pull

Q.15 Magnesium is an important nutrient ion in green plants, as it is an essential component of
A) Chlorophyll
B) Cell sap
C) Protein
D) Glucose

Q.16 The stomata are closed at temperature (in centigrade)
A) 15^{0}C
B) 35^{0}C
C) 25^{0}C
D) 45^{0}C

Q.17 The upward movement of sap through xylem is
A) Ascent of sap
C) Plasmolysis

B) Guttation D) Deplasmolysis

Q.18 Magnesium of chlorophyll is replaced in hemoglobin by
A) Calcium C) Phosphorous
B) Potassium D) Iron

Q.19 Casparian strips are present in
A) Epidermis C) Endodermis
B) Cortex D) Pericycle

Q.20 Which of the following statement is correct about CASPARIAN STRIPS?
A) Separates the extra cellular space in roots
B) Separates the intracellular space in roots into two compartment
C) Interrupt the apoplast path way
D) Both a & c

Q.21 The process of the escape of liquid from the tip of uninjured leaf is called.
A) Guttation C) Transpiration
B) Evaporation D) Evapo-transpiration

Q.22 In land plants the guard cells differ from other epidermal cells in having.
A) endoplasmic reticulum C) Chloroplasts
B) Cytoskeleton D) Mitochondria

Q.23 Guttation is the result of.
A) Diffusion C) Transpiration
B) Osmosis D) Root pressure

Q.24 All the following involves osmosis except.
A) Water from the soil entering root hair
B) Water passing from a root hair to adjacent cells
C) Water passing up a xylem vessel element to xylem vessel element above it
D) Water entering a mesophyll cell from the xylem vessel element

Q.25 The pores in leaves through which water comes out in the form of drops or droplets are called.
A) Bordered pits C) Hydathodes
B) Stomata D) lenticels

Q.26 The opening and closing of stomata takes place due to.
A) Effect of hormones
B) Pressure of gases inside the leaf
C) Genetic constitution
D) Changes in the turgor pressure in guard cells

Q.27 By process of guttation plants can.
A) Excrete the salt C) compensate the loss of water
B) Remove excess water D) Reduce temperature effect

Q.28 Guttation takes place through.
A) Wounds C) Lenticels
B) Hydathodes D) Stomata

Q.29 The shade of a tree is cooler than the shade of a roof due to.
A) Transpiration C) Guttation
B) Photosynthesis D) Green leaves

Q.30 Gaseous exchange in submerged hydrophytes takes place through.
A) Stomata C) Lenticels
B) General surface D) None

Q.31 Movement of water and solutes is negligible along the
A) Symplast pathway C) Vacular pathway
B) Apoplast pathway D) Both b & c

Q.32 Cohesion tension theory was proposed by
A) Sacks C) Koch
B) Dixon D) Munch

ANSWERS

1.	A	2.	C	3.	B	4.	C	5.	A	6.	D	7.	B	8.	A
9.	C	10.	B	11.	D	12.	D	13.	C	14.	B	15.	A	16.	D
17.	A	18.	D	19.	C	20.	C	21.	A	22.	A	23.	D	24.	C
25.	C	26.	D	27.	B	28.	B	29.	A	30.	B	31.	C	32.	B

Q.1 Plasma cells are
A) the same as memory cells
B) formed from blood plasma
C) B cells that are actively secreting antibody
D) inactive T cells carried in the plasma

Q.2 Antibodies combine with antigens
A) at variable regions
B) at constant region
C) only if macrophages are present
D) both A and C are correct

Q.3 In addition to the immune system, we are protected from disease by
A) normal body temperature
B) hormones
C) antigens
D) mucous membrane and cilia

Q.4 Fever
A) decrease interferon production
B) decrease the concentration of iron in the blood
C) decrease the activity of phagocytes
D) decrease the inflammation

Q.5 T and B cells are
A) lymphocytes
B) macrophages
C) natural killer cells
D) red blood cells

Q.6 When B-cells are presented with antigen they differentiate into
A) T-cells
B) helper T-cells
C) plasma cells
D) bursa cells

Q.7 When one receives a booster shot for polio which type of cell is most dire stimulated?
A) killer T-cells
B) memory cells
C) phagocytes
D) suppressor cells

ANSWERS

1.	C	2.	A	3.	D	4.	A	5.	A	6.	B	7.	B

Q.1 HCI in gastric juice is secreted by which one of the following cells?
A) Chief cells
B) Oxyntic cells
C) Mucous cells
D) Kupffer cells

Q.2 The lymph vessel of villi is called:
A) Epithelium
B) Afferent lymph vessel
C) Adenoids
D) Lacteal

Q.3 Oxyntic cells in stomach produce:
A) Pepsin
B) Pepsinogen
C) Gastrin
D) HCI

Q.4 The hormone which inhibits the secretion of gastric juice is:
A) Secretin
B) Gastrin
C) Thyroxin
D) Parathormone

Q.5 Trypsinogen is activated to trypsin by:
A) HCI
B) Enterokinase
C) Mucus
D) Gastrin

Q.6 The emulsification of fats is the role of:
A) Saliva
B) Pancreatic juice
C) Gastrin
D) Bile

Q.7 Digestion of _____ starts in oral cavity due to the action of enzyme present in saliva:
A) Starch
B) Cellulose
C) Fatty Acids
D) Polypeptides

Q.8 Which of the following enzyme is released in an inactive form?
A) Amylase
B) Lipase
C) Enterokinase
D) Pepsin

Q.9 Which of the following hormones stimulate the secretion of pancreatic juice from pancreas in liver?
A) Secretin
B) Pepsinogen
C) Gastrin
D) Both gastrin & secretin

Q.10 In large intestine vitamin k is formed by the activity of:
A) Symbiotic bacteria
B) Obligate parasite
C) Parasitic bacteria
D) Facultative bacteria

Q.11 During swallowing of food, which structure closes nasal opening?
A) Hard palate
B) Soft palate
C) Epiglottis
D) Larynx

Q.12 The muscles of the stomach walls thoroughly mix up the food with gastric juices and the resulting semi-solid/semi-liquid material is called:
A) Bolus
B) Bolus or chime
C) Mucus
D) Chyme

Q.13 Trypsinogen is converted into trypsin by the activity of:
A) Goblet cells
B) Absorptive cells
C) Enterokinase
D) Peptidase

Q.14 In large intestines, vitamin K is formed by the activity of:
A) Symbiotic bacteria
B) Obligate parasite
C) Parasitic bacteria
(d)Facultative bacteria

Q.15 Goblet cells secrete:
A) HCI
B) Mucus
C) Enzymes
D) Amylase

Q.16 Which one of the following vitamins is produced by microflora of large intestine?
A) Vitamin D
B) Vitamin K
C) Vitamin C
D) Vitamin A

Q.17 _____ is activated to _____ by enterokinase/enteropeptidase enzyme secreted by the lining of duodenum:
A) Trypsinogen, trypsin
B) Pepsinogen, pepsin
C) Pepsinogen, Trypsin
D) Chymotrypsinogen, chymotrypsin

Q.18 Which of the following are absorbed in the large intestine?
A) Water & peptones
B) Salts & glycerol
C) Water & salts
D) Amino acids & sugars

Q.19 **Saliva is basically composed of water, mucus, amylase and:**
A) Sodium hydroxide
B) Hydrocarbons
C) Sodium bicarbonate
D) Sodium chloride

Q.20 **In human, *Escherichia coli* is involved in the formation of:**
A) Calcium
B) Vitamin D
C) Vitamin A
D) Vitamin K

Q.21 **What is the function of the large intestine?**
A) To complete digestion
B) To return water and salts to the body and remove solid waste
C) To transfer nutrients out of the digestive system
D) To add water and salts to solid waste

Q.22 **Which of the following structure has no secretion in the digestive process?**
A) Pancreas
B) Stomach
C) Tongue
D) Teeth

Q.23 **Food is converted into bolus in**
A) Stomach
B) Rectum
C) Oral cavity
D) Appendix

Q.24 **Consists of the duodenum plus the jejunum plus the ileum:**
A) Small intestine
B) Colon
C) Cecum
D) Vermiform appendix

Q.25 **The last and longest portion of the small intestine where most absorption takes place:**
A) Duodenum
B) Jejunum
C) Ileum
D) Caecum

Q.26 **Gastric juice contains:**
A) Pepsinogen, HCl
B) Pepsin, Trypsin
C) Pepsin, Renin
D) Renin, Trypsin

Q.27 **Appendix is attached to:**
A) Caecum
B) Colon
C) Rectum
D) Duodenum

Q.28 **_____ secrete mucus to protect the lining of the small intestine from stomach acid:**
A) Zymogen cells
B) Goblet cells
C) Parietal cells
D) Oxyntic cells

Q.29 **Emulsification of fat is carried out by:**
A) Bile pigments
B) Bile salts
C) HCl
D) Pancreatic juice

Q.30 **Pancreatic juice and hormones of pancreas are produced by:**
A) Same cells
B) Same cells at different times
C) Statement is wrong
D) Different cells

Q.31 **What happens if excess glucose is absorbed from the small intestine?**
A) The liver removes it from the blood and stores it as glycogen
B) Enzymes break it down so homeostasis is maintained
C) It is converted to starch and stored in body cells
D) It is converted to carbon dioxide and water in the blood

Q.32 **One of the digestive juices that lacks enzymes but aids in digestion is:**
A) Bile
B) Chyme
C) Chyle
D) Pancreatic juice

Q.33 **A lubricant, mucin in saliva is made up of:**
A) Phospholipids
B) Polyunsaturated fats
C) Glycoproteins
D) Glycolipids

Q.34 **If pancreas is removed, the compound which remain undigested** is
A) Proteins
B) Carbohydrates
C) Fats
D) All of these

Q.35 **Most of the fat digestion occurs in**
A) Rectum
B) Stomach
C) Oral cavity
D) Small intestine

Q.36 Zymogen cells are also called
A) Parietal cells
B) Chief cells
C) Oxyntic cells
D) Mucous cells

Q.37 Release of pancreatic juice is stimulated by:
A) Enterokinase
B) Secretin
C) Tripsinogen
D) Gastrin

Q.38 What is common among amylase, rennin and trypsin?
A) These are produced in stomach
B) These act at a pH lower than 7
C) These all are proteins
D) These all are proteolytic enzymes

Q.39 Protection and lubrication of stomach lining is by:
A) Pepsin
B) HCI
C) Food
D) Mucous

Q.40 The function of Goblet cells is to secrete:
A) Gastrin
B) Hydrochloric acid
C) Pepsinogen
D) Mucus

Q.41 Gastric glands are composed of types of cells:
A) Two
B) Three
C) Four
D) Five

Q.42 Food enters from stomach into small intestine through:
A) Pyloric Sphincter
B) Cardiac Sphincter
C) Semilunar valve
D) Diaphragm

Q.43 _____ are the part of a gastric gland which produce hydrochloric acid:
A) Parietal Cells
B) Goblet Cells
C) Chief Cells
D) Zymogen Cells

Q.44 Protein components of food are digested by the enzymatic secretion of:
A) Goblet Cells
B) Parietal Cells
C) Zymogen Cells
D) Oxyntic Cells

Q.45 Digestive system consist of different layers, the innermost is known as:
A) Submucosa
B) Mucosa
C) Muscularis
D) Serosa

Q.46 Pepsin hydrolyzes proteins to yield
A) Peptones
B) Polypeptides
C) Amino acids
D) Both 'a' & 'b'

Q.47 Duodenum is about _____ long
A) 20-22 cm
B) 15-25 cm
C) 20-25 cm
D) 15-22 cm

Q.48 epsinogen is activated to pepsin by
A) active secretin
B) hydrochloric acid
C) active pepsin and HCl
D) gastrin

Q.49 Liver secretes bile into the
A) duodenum
B) ileum
C) jejunum
D) peritoneum

Q.50 Emulsification of fat will not occur in the absence of
A) lipase
B) bile pigment
C) bile sat
D) pancreatic juice

Q.51 Fatty acids and glycerol are first absorbed by
A) lymph vessel
B) villi
C) blood capillaries
D) hepatic portal vein

Q.52 The hormone responsible for stimulating secretion of hydrochioroic acid bti stomach cells is
A) pepsin
B) secretin
C) gastrin
D) insulin

Q.53 trypsinogen is changed to trypsin by

A) gastrin
B) enterokinase
C) secretin
D) hydrochloric acid

ANSWERS

1.	B	2.	D	3.	d	4.	A	5.	B
6.	d	7.	a	8.	d	9.	a	10.	B
11.	D	12.	C	13.	A	14.	B	15.	B
16.	A	17.	C	18.	C	19.	D	20.	B
21.	D	22.	A	23.	C	24.	C	25.	A
26.	A	27.	B	28.	B	29.	D	30.	A
31.	A	32.	C	33.	C	34.	D	35.	B
36.	B	37.	C	38.	D	39.	D	40.	C
41.	A	42.	A	43.	C	44.	B	45.	D
46.	D	47.	C	48.	A	49.	C	50.	A
51.	C	52.	B						

Q.1 $HCO_3^- + H^+ \rightarrow H_2CO_3 \rightarrow CO_2 + H_2O$ The reaction shown above occurs in the capillaries of the:
A) eye
B) stomach
C) aorta
D) Pulmonary circuit

Q.2 Which of the following are the only vertebrates in which blood flows directly from respiratory organs without first returning to the heart?
A) Amphibians
B) Fishes
C) Birds
D) Mammals

Q.3 Which of the following occurs with the exhalation of air from human lungs?
A) The volume of the thoracic cavity decreases.
B) The diaphragm contracts.
C) The epiglottis closes.
D) The rib cage expands.

Q.4 Most of the CO_2 in the blood is transported:
A) As a gas dissolved in the plasma
B) As undissociated carbonic acid (H_2CO_3)
C) In the O_2-binding site of hemoglobin
D) As bicarbonate ions

Q.5 When carbon dioxide pressure is increased the capacity to hemoglobin is
A) decrease
B) remain constant
C) increase many folds
D) is doubled

Q.6 Exchange of gases during organismic respiration is carried out only by?
A) Osmosis
B) Evaporation
C) Diffusion
D) Vaporization

Q.7 Hemoglobin in man increase the oxygen carrying capacity upto
A) 75 times
B) 60 times
C) 50 times
D) 100 times

Q.8 Cellular respiration is the process in which cell utilizes Oxygen to produce?
A) Glucose
B) Carbon dioxide
C) Carbon monoxide
D) Proteins

Q.9 Which of the following have higher content of Oxygen?
A) Water
B) Air
C) SO,
D) CO2

Q.10 Sound box or voice box is another name of?
A) Pharynx
B) Larynx
C) Oral cavity
D) Trachea

Q.11 Membrane, which covers the lungs and reduces the friction, is called
A) Mesentery
B) Pleura
C) Pulmonary membrane
D) Pericardium

Q.12 During inspiration, the diaphragm?
A) Contracts and rises
B) Relaxes and rises
C) Contracts and goes downward
D) Relaxes and goes downward

Q.13 Blood contains _____oxygen per 100 ml of blood when hemoglobin is 98% saturated
A) 17.6 ml
B) 19.6 ml
C) 18.6 ml
D) 16.6 ml

Q.14 Glottis is the opening of
A) Bronchus
B) Voice box
C) Trachea
D) Nose

Q.15 When blood leaves the capillary bed most of carbon dioxide is in the form of
A) Carbonate ion
B) Carbonic acid
C) Bicarbonate ion
D) All of these

Q.16 Bronchi with a diameter of _____ or less are called bronchioles:
A) 5 mm
B) 2 mm
C) 10 mm
D) 1 mm

Q.17 Air sac consists of several microscopic single layered structures called:
A) Bronchi
B) Alveoli
C) Parabronchi
D) None of these

Q.18 During rest, breathing occurs in humans at the frequency of _____ times per minute:
A) 10-15
B) 20-25
C) 15-20
D) 25-30

Q.19 Walls of chest cavity are composed of:
A) Ribs
B) Diaphragm
C) Intercostal muscles
D) Both 'a' & 'b'

Q.20 The expansion of the lung and inhalation of air are in part the result of:
A) The muscles of the lungs relaxing, allowing the lungs to get larger
B) Decreased pressure of the interpleural fluid
C) The contraction of the muscles of the diaphragm
D) Both 'a' & 'b' are correct

Q.21 Air sac is the _____ unit of lungs:
A) Structural
B) Both 'a' & 'b'
C) Functional
D) None of the above

Q.22 Larynx is the modified portion of:
A) Pharynx
B) Bronchus
C) Voice box
D) Trachea

Q.23 When oxygen tension is 115mm mercury haemoglobin is _____ saturated:
A) 60%
B) 100%
C) 98%
D) 20%

Q.24 Plasma proteins carry about _____ CO_2 from the body fluids to the lung capillaries:
A) 2%
B) 5%
C) 3%
D) 10%

Q.25 Myoglobin is haemoglobin-like _____ containing protein:
A) Oxygen
B) Iron
C) Carbon dioxide
D) All the above

Q.26 _____ CO_2 is carried as carboxyhaemoglobin in human body:
A)20%
B)50%
C)40%
D)70%

Q.27 The combination of oxygen with haemoglobin is called:
A) Oxidation
B) Reduction
C) Oxygenation
D) Both 'a' & 'b'

Q.28 The most powerful respiratory stimulus for breathing in a healthy person is:
A) Loss of oxygen in tissues
B) pH (acidosis)
C) Increase of carbon dioxide
D) pH (alkalosis)

Q.29 Bronchi branch into the tubes of smaller diameters (less than 1 mm) known as:
A) Microtrachea
B) Alveoli
C) Bronchioles
D) Eustachian tubes

Q.30 Tidal volume is air:
A) Remaining in the lungs after forced expiration
B) Exchanged during normal breathing
C) Inhaled after normal inspiration
D) Forcibly expelled after normal expiration

Q.31 Oxygen and carbon dioxide are exchanged in the lungs and through all cell membranes by:
A) Osmosis
B) Filtration
C) Diffusion
D) Active transport

Q.32 How is the bulk of carbon dioxide carried in blood?
A) Chemically combined with the amino acids of hemoglobin as carbaminohemoglobin in the red blood cells
B) As the bicarbonate ion in the plasma after first entering the red blood cells
C) As carbonic acid in the plasma
D) Chemically combined with the heme portion of hemoglobin

Q.33 Which of the following provide the greatest surface area for gas exchange?
A) Alveolar sacs
B) Respiratory bronchioles
C) Alveoli
D) Alveolar ducts

Q.34 The nose serves all the following functions except:
A) As a passageway for air movement
B) Warming and humidifying the air
C) As the initiator of the cough reflex
D) Cleansing the air

Q.35 The critical first event in human inspiration:
A) Collapse of the alveoli
B) Muscular constriction of the windpipe
C) Relaxation of the diaphragm muscle
D) Contraction of the diaphragm muscle

Q.36 Which one of the following statement is not correct regarding trachea?
A) It usually lies posterior to the muscular esophagus
B) It splits into the right and left bronchi to supply air to the lungs
C) Opening to the trachea is covered by epiglottis
D) Tracheal rings are C-shaped

Q.37 Opening to the trachea is covered by a small flap of tissues termed as the:
A) Glottis
B) Epiglottis
C) Trachea
D) Larynx

Q.38 What is another name for the windpipe?
A) Lungs
B) Trachea
C) Larynx
D) Oesophagus

Q.39 The following structures are found in the walls of the gas exchange system:
i. Capillaries ii. Cilia iii. Elastic fibres iv. Goblet cells
v. Smooth muscle cells
Which would be found in the lining of an alveolus?
A) i & iii
B) ii & v
C) i, ii & iii
D) iv & v

Q.40 Cartilage is found in which structure?
A) Alveolus
B) Capillary
C) Bronchiole
D) Trachea

Q.41 Which of the following is not a role of elastic fibres in the gas exchange system?
A) Contract to decrease the volume of the alveoli during expiration
B) Recoil to force air out of the alveoli during expiration
C) Stretch to accommodate more air in the alveoli during deep breathing
D) Stretch to increase the surface area of the alveoli for gas exchange

Q.42 Which of the following best describes the process of gas exchange in the lungs?
A) Air moves in and out of the alveoli during breathing
B) Carbon dioxide diffuses from deoxygenated blood in capillaries into the alveolar air
C) Oxygen and carbon dioxide diffuse down their concentration gradients between blood and alveolar air
D) Oxygen diff uses from alveolar air into deoxygenated blood

Q.43 Which of the following substances in tobacco smoke damage the gas exchange system?
A) Carbon monoxide and carcinogens
B) Carcinogens and tar
C) Carbon monoxide and nicotine
D) Nicotine and tar

Q.44 Non-smokers can force out about _____ of air after taking a deep breath:
A) 4 dm^3
B) 1.5 dm^3
C) 2 dm^3
D) 0.5 dm^3

Q.45 If you hold your breath for a long time, body CO_2 levels are likely to _____, and the pH of body fluids is likely to _____.
A) Increase; increase
B) Increase; decrease
C) Decrease; increase
D) Decrease; decrease

Q.46 When you take a deep breath, your stomach moves out because:
A) Swallowing air increases the volume of the thoracic cavity
B) Your stomach shouldn't move out when you take a deep breath because you want the volume of your chest cavity to increase, not your abdominal cavity
C) Contracting your abdominal muscles pushes your stomach out, generating negative pressure in your lungs
D) When your diaphragm contracts, it moves down, pressing your abdominal cavity out

Q.47 The nose, pharynx, and associated structures are all part of the:
A) Respiratory division
B) Lower respiratory system
C) Upper respiratory system
D) Bronchial tree

Q.48 **What occurs when you inhale?**
A) The volume of the lungs increases, increasing the air pressure
B) The volume of the lungs decreases, increasing the air pressure
C) The diaphragm flattens and moves downward
D) The diaphragm relaxes and rises

Q.49 **The carbon dioxids pressure in the lung capillaries is.**
A) less than that in alveolar air
B) equal to that in alveolar air
C) more than that in alveolar air
D) similar to oxygen pressure in the capillaries

Q.50 **The respiratory tubes devoid of cartilaginous rings are.**
A) trachea
B) bronchioles
C) bronchi
D) none of these

Q.51 **Tissue respiration is a process by which.**
A) carbohydrates are synthesised
B) fat molecules are metabolised
C) proteins are broken down
D) energy is liberated

Q.52 **To take air into the lungs the diaphragm must be.**
A) dome shaped
B) flattened
C) oblique
D) normal

Q.53 **Body tissues obtain O2 from oxyhaemoglobin because of its dissociation caused by.**
A) low O_2 concentration
B) low CO_2 concentration
C) high CO_2 concentration
D) low O_2 and high CO_2 concentration

Q.54 **Find the incorrectly matched pair.**
A) CO_2 – binds with the amine radicals of haemoglobin
B) O_2 – bins with the fe2⁺ atoms of the haeme unit
C)CO – binds with the amine radicals of the globin parts of haemoglobin
D)2, 3, BPG – binds with the haemoglobin and reduces oxygen binding affinity of haemoglobin

Q.55 **In the tissues high concentration f carbon dioxide.**
A) increases the affinity of haemoglobin to oxygen but decreases its affinity to hydrogen
B) increases the affinity of haemoglobin to both oxygen and hydrogen
C)decreases the affinity of haemoglobin to both oxygen and hydrogen
D)decreases the affinity of haemoglobin to oxygen but increases its affinity to hydrogen

Q.56 **After taking a long deep breath we do not inspire for sometimes due to.**
A) more CO_2 in blood
B) less CO_2 in blood
C) more O_2 in blood
D) less O_2 blood

Q.57 **Oxyhaemoglobin dissociates into oxygen and deoxyhaemoglobin at.**
A) low O_2 pressure in tissue
B) equal O_2 pressure inside and outside tissue
C) high O_2 pressure in tissue
D) all times irrespective of O_2 pressure

Q.58 **What is the amount of carbon dioxide per 100 ml of blood in venous blood in men?**
A) 54 ml
B) 04 ml
C) 50 ml
D) 98 ml

Q.59 **What is the amount of carbon dioxide per 100 ml of blood in arterial blood in men?**
A) 50 ml
B) 04 ml
C) 54 ml
D) 98 ml

Q.60 **How much air lungs can hold when they are fully inflated?**
A) 5 liters
B) 4.5 liters
C) 4 liters
D) 3.5 liters

Q.61 **Exchange of only.....ml of CO_2 per 100 ml of blood occurs between blood and lungs and between blood and tissues:**
A) 2
B) 6
C) 4
D) 8

Q.62 **What structure prevents food from entering the air passages to the lungs?**
A) Trachea
B) Glottis
C) Epiglottis
D) Diaphragm

Q.63 **Which is the correct path of air through the respiratory system?**
A) Nose → Trachea → Lungs → Alveoli
B) Nose → Lungs → Trachea → Alveoli
C) Nose → Alveoli → Lungs → Trachea
D) Nose → Trachea → Alveoli → Lungs

Q.64 **What statement about gas exchange is correct?**
A) The alveoli are surrounded by a large number of arteries
B) Oxygen and carbon dioxide follow concentration gradients in the bronchi
C) The large surface area of the alveoli is needed for sufficient gas exchange
D) The blood must be moist to carry gases

Q.65 Where does gas exchange take place?
A) Between arteries & alveoli
B) Between veins & bronchi
C) Between capillaries & alveoli
D) Between capillaries & bronchioles

Q.66 How is oxygen transported in the blood?
A) Bound to hemoglobin in red blood cells
B) Bound to hemoglobin in the liquid part of the blood
C) Bound to free iron atoms
D) Free in red blood cells

Q.67 Why does carbon dioxide move out of the blood in the lungs?
A) Carbonic acid raises the pH of the blood, causing carbon dioxide to leave the blood
B) The medulla signals the blood to release carbonic acid
C) Carbon dioxide concentrations are higher in the blood than in the alveoli, so the pons signals it to diffuse out.
D) Carbon dioxide concentrations are higher in the blood than in the alveoli, so it diffuses out

Q.68 Which of the choices below is not a functional process performed by the respiratory system?
A) Pulmonary ventilation
B) External respiration
C) Transport of respiratory gases
D) Pulmonary respiration

Q.69 Which of the following maintains the patency (openness) of the trachea?
A) Surface tension of water
B) Cartilage rings
C) Surfactant
D) Pseudostratified ciliated epithelium

Q.70 The volume of air that can be exhaled during forced breathing in addition to tidal volume is:
A) Residual volume
B) Vital capacity
C) Expiratory reserve volume
D) Total lung capacity

Q.71 During inspiration:
A) Diaphragm and external muscles relax
B) Diaphragm and internal intercostal muscles relax
C) Diaphragm and external intercostal muscles contract
D) Diaphragm and internal intercostal muscles contract

Q.72 Increase in CO_2 concentration shall cause:
A) Slower and shallower breathing
B) Faster and deeper breathing
C) Slower and deeper breathing
D) No effect on breathing

Q.73 Alveoli become enlarged and damaged with reduced surface area in heavy smokers. The condition is called:
A) Silicosis
B) Asthma
C) Emphysema
D) Bronchitis

Q.74 Gases diffuse over the respiratory surface because of:
A) O_2 is more in alveoli than in blood
B) CO_2 is more in alveoli than in blood
C) O_2 is more in blood than in tissues
D) PCO_2 is more in blood than in tissues

Q.75 Vocal cords occur in:
A) Pharynx
B) Glottis
C) Larynx
D) Bronchial tube

Q.76 The pigment which stores oxygen in muscles is:
A) Hemoglobin
B) Myosin
C) Myoglobin
D) Actinomyosin

Q.77 What is the residual volume of air which always remains inside the lungs of human?
A) 3.5 Liters
B) 5.0 Liters
C) 0.5 Liters
D) 1.5 Liters

Q.78 The total inside capacity of lungs is _____ for man:
A) 7 liters
B) 6-7 liters
C) 5 liters
D) 2.5 liters

Q.79 About 70-85% CO_2 in blood is carried:
A) As carboxyhaemoglobin
B) Freely as CO_2
C) With proteins in plasma
D) As bicarbonate

Q.80 Carboxyhaemoglobin (10-20%) is formed when CO_2 combines with:
A) Amino group of haemoglobin
B) Haem portion of haemoglobin
C) Iron part of haemoglobin
D) Plasma proteins

Q.81 **Breathing consists of:**
A) Four phases
B) One phase
C) Three phases
D) Two phases

Q.82 **Chances of lung cancer are _____ times more in those persons who smoke:**
A) 5
B) 50
C) 10
D) 100

Q.83 **_____ of lung cancer is caused by smoking:**
A) 20%
B) 50%
C) 70%
D) 90%

Q.84 **_____ tuberculosis is a disease of lungs in which inside of lungs is damaged:**
A) Respiratory
B) Pulmonary
C) Lung
D) Mycobacterium

Q.85 **_____ is an allergic reaction to pollen, spores, cold, humidity and pollution etc:**
A) Emphysema
B) Respiratory distress syndrome
C) Asthma
D) Cancer

Q.86 **Emphysema is the breakdown of:**
A) Bronchi
B) Alveoli
C) Parabronchi
D) Lungs

Q.87 **In human blood, the carrier of oxygen to the tissues is:**
A) Blood plasma
B) Haemoglobin
C) Red blood cells
D) Lymphocytes

Q.88 **Larynx opens into pharynx by:**
A) Gullet
B) Epigolttis
C) Glottis
D) None of these

Q.89 **Diffusion of O_2 into chest cavity and CO_2 out occurs due to:**
A) Osmotic pressure
B) High blood pressure
C) Partial pressure of gases
D) Both 'a' & 'b'

Q.90 **Haemoglobin combines with oxygen to form:**
A) Oxyhaemoglobin
B) Peroxyhaemoglobin
C) Haemoglobin dioxide
D) Haemoglobin monoxide

Q.91 **Haemoglobin can absorb maximum oxygen:**
A) In the water
B) On the earth
C) At sea level
D) On the mountains

Q.92 **The most important muscular structure in respiratory system of animals which causes inspiration:**
A) External intercostals muscles
B) Diaphragm
C) Internal intercostals muscles
D) Ribs

Q.93 **Mucus is a slimy solution of mucin, which is composed of:**
A) Glycoproteins
B) Lipoproteins
C) Glycolipids
D) Cholesterols

Q.94 **The continual beating of their cilia carries the carpet of mucus upwards towards the larynx at a speed of about:**
A) 10cm min^{-1}
B) 1mm min^{-1}
C) 10mm min^{-1}
D) 1cm min^{-1}

Q.95 **Lung cancer takes _____ to develop:**
A) 10–20 years
B) 15–20 years
C) 20–30 years
D) 20–40 years

Q.96 **How oxygen enters in blood from alveoli of lungs?**
A) Pressure of CO_2
B) By haemoglobin
C) Simple diffusion
D) None of these

Q.97 **During inspiration, diaphragm:**
A) Contracts
B) Neither contracts nor expands
C) Expands
D) First contracts and then expands

Q.98 **During inspiration the space inside the chest cavity is increased due to.**
A) The relaxation of the muscles of the diaphragm
B) Relaxation of the external intercostal muscles
C)Increased pressure
D)The contraction of the muscles of the diaphragm

Q.99 A disease caused by gradual breakdown of the thin walls of alveoli is _____.
A) Tuberculosis
B) Emphysema
C) Asthma
D) Bronchitis

Q.100 During breathing air from pharynx centers to. 2018
A) Trachea
B) Alveoli
C) Bronchioles
D) Bronchi

Q.101 Gradual beak down of the alveolar wall leads to which type of disease in a smoker.
A) Cororary heart disease
B) Emphysems
C) Bronchitis
D) Asthma

Q.102 Which of the following statement is correct about the respiratory pigments?
A) Myoglobin and hemoglobin has higher affinity for nitrogen
B) Cyanide and hemoglobin has low affinity for oxygen
C)Myoglobin has more affinity for oxygen as compared to hemoglobin
D)Albumin globulin and proteins are present in respiratory pigments

Q.103 The low levels of surfactant produced by alveolar epithelium cause.
A) Respiratory distress syndrome
B) Bronchitis
C) Emphysema
D) Asthma

Q.104 The opening into the wind pipe or trachea is called.
A) larynx
B) glottis
C) epiglottis
D) bronchi

Q.105 Ciliated epithelium in the trachea of mammals helps in.
A) sucking in air
B) pushing mucus out
C) pushing expired air out
D) keeping the alveolar air in circulation

Q.106 Which of the following is entirely made of cartilage?
A) Nasal septum
B) glottis
C) larynx
D) trachea

Q.107 Volume of air left after maximum forceful expiration in humans is.
A) total lung capacity
B) vital capacity
C) residual volume
D) tidal volume

Q.108 How much amount of oxygen is present in one gram of haemoglobin.
A)20ml
B)40ml
C)1.34ml
D)13.4ml

Q.109 Oxygen binding to haemoglobin in blood is.
A) directly proportional to the concentration of CO_2 in the medium
B) inversely proportional to the concentration of CO_2 in the medium
C)directly proportional to the concentration of CO in the medium
D)independent of the concentration of CO in the medium

Q.110 In the alveoli the factors favourable for the formation of oxyhaemoglobin include.
A) low PO_2, high PCO_2 and high H+ concentration
B) low PO_2 high PCO_2 and high H+ concentration and high temperature
C) high PO_2 high PCO_2 and high H+ concentration
D) high PO_2, low PCO_2 and low H+ concentration and low temperature

Q.111 Rate of breathing is controlled by.
A) the amount of freely available oxygen
B) muscle function of the body
C) amount of carbon dioxide
D) stress

Q.112 Which one of the following statement is not correct regarding trachea.
A) It usually lies posterior to muscular oesophagus
B) It splits into right and left bronchi to supply air to the lungs
C) opening to the trachea is covered by epiglottis
D) trachea rings are incomplete cartilaginous and C shaped

Q.113 Cartilaginous rings in trachea are incomplete at which surface.
A) dorsal
B) lateral
C) ventral
D) ventrolateral

Q.114 How are alveoli designed to maximize the exchange of gases.
A) by increasing the surface area of trachea
B) by decreasing the surface area of the lungs
C) by increasing the surface area of the lungs for gaseous exchange
D) None

Q.115 A large portion of oxygen remains unused in the human blood even after its uptake by the tissues. This oxygen.
A) acts as a reserve during muscular exercise
B) raises the pCO_2 of blood to 75mm of Hg
C) is enough to take oxyhaemoglobin saturation at 96%
D) helps in releasing more oxygen to the epithelial tissues

Q.116 Given below are the parts of mammalian respiratory pathway. 1. Pharynx. 2.Nostrils 3. Bronchi 4. Trachea 5. Nasal chamber 6. Bronchioles 7.Alveoli 8.Larynx Their correct sequences is.
A)2 - 1 - 5 - 3 - 8 - 4 - 6 - 7
B)7 - 5 - 2 - 1 - 3 - 4 - 8 - 6
C)2 - 5 - 1 - 8 - 4 - 3 - 6 - 7
D)1 - 2 - 4 - 5 - 8 - 6 - 3 - 7

Q.117 The structure which contributes to the breathing movement in mammals is. (i) Ribs (ii) Intercostal muscles (iii) Larynx (iv) Diaphragm (v) Sternum (vi) Epiglottis
A) (i),(ii),(iii) and (iv)
B) (ii),(iv),(v) and (vi)
C) (i),(ii),(iv) and (v)
D) (iii) and (vi)

Q.118 Breathing rate will increase when CO2 ..... in our blood and causes a ... in pH.
A) increase / rise
B) decrease / rise
C) increase / drop
D) decrease / drop

Q.119 Bulk of carbon dioxide (CO2) is transported to lings in the form of.
A) bicarbonate of blood plasma and RBCs
B) free CO_2 in blood plasma
C) 70% carbaminohaemoglobin and 30% as bicarbonates
D) carbaminohaemoglobin in RBCs

Q.120 During the initial part of inspiration which one of the following does not occur?
A) Intrapulmonary pressure fall
B) intrathoracic pressure rise
C) intra abdominal pressure rise
D) the partial pressure of oxygen in dead space rise

Q.121 Oxygen affinity is increase by all except
A) Alkalosis
B) increase Hb
C) Hypoxia
D) Hypothermia

Q.122 Carboxyhemoglobin (10-20%) is formed when CO2 combines with:
A) Amino group of hemoglobin
B) iron part of hemoglobin
C) Haem portion of hemoglobin
D) Plasma proteins

Q.123 About 70-85% Co2 in blood is carried:
A) As carboxylase myoglobin
B) With proteins in plasma
C) Freely as CO2
D) As bicarbonate

Q.124 What is the residual volume of air which always remains inside the lungs of human
A) 3.5 liters
B) 5.0 liters
C) 0.5 liters
D) 1.5 liters

Q.125 Which one of the following represents the part of respiratory tract where exchange of gases takes place.
A) from external nostrils upto terminal bronchioles
B) glottis to respiratory bronchioles
C)alveoli and its ducts
D)trachea bronchi and its ducts

Q.126 Colour of oxyhaemoglobin is.
A) dull red
B) bright red
C) bluish red
D) dull brown

Q.127 The vibrations of which of these membranes produces vocal sounds.
A) glottis
B) vocal sacs
C) vocal cords
D) epiglottis

Q.128 Internal respiration refers to.
A) exchange of gases between lungs and blood
B) cellular respiration
C) exchange of gases between lungs and atmosphere
D) respiration in open air

Q.129 **.....enzyme present in R.B.C facilitates the combination of oxygen and hemoglobin to form oxyhemoglobin:**
A) Oxygenase
B) Carbonic anhydrase
C) Anhydrase carboxylase
D) Carbonic hydroxylase

Q.130 **Alveoli with an increased volume but decreased surface area is the characteristic of:**
A) Asthma
B) Lung cancer
C) Emphysema
D) Tuberculosis

Q.131 **In the living organisms, respiration occurs at:**
A) Organismic level
B) Organismic and cellular levels
C) Cellular level
D) None of these

Q.132 **Respiring cells need oxygen to release energy from food molecules, which is utilized in the formation of:**
A) AMP
B) ATP
C) ADP
D) Phosphate

Q.133 **The purple - red respiratory pigment found in the blood of man is the:**
A) Fibrinogen
B) Hemoglobin
C) Nitrogen
D) Oxyhemoglobin

Q.134 **Nasal cavities are lined with mucous membrane of ciliated tissue**
A) Endothelium
B) Myocardium
C) Myothelium
D) Epithelium

Q.135 **Small amount of Carbon dioxide is also carried by corpuscles combined with**
A) Potassium
B) Sodium
C) Magnesium
D) Chloride

Q.136 **Large dust particles are trapped in human nostrils by which of the following**
A) Bone
B) Mucous
C) Hairs
D) Both b and c

Q.137 **Lungs are spongy due to the presence of millions of**
A) Air sacs
B) Bronchioles
C) Alveoli
D) All of these

Q.138 **Air sac is the _____unit of lungs:**
A) Structural
B) Both a & b
C) Functional
D) None of the above

Q.139 **Each nasal cavity in man is sub-divided into_____passage ways:**
A) 2
B) 4
C) 3
D) 5

Q.140 **In man, air is channelized from the pharynx into the:**
A) Bronchi
B) Trachea
C) Parabronchi
D) Larynx

Q.141 **The expansion of the lung and inhalation of air are in part the result of:**
A) The muscles of the lungs relaxing, allowing the lungs to get larger
B) Decreased pressure of the inter pleural fluid
C) The contraction of the muscles of the diaphragm
D) Both a & b are correct

Q.142 **At seal level, the 500ml of blood will have how much oxygen?**
A) 20 ml
B) 100 ml
C) 50 ml
D) 500 ml

Q.143 **Larynx is the modified portion of:**
A) Pharynx
B) Bronchus
C) voice box
D) Trachea

Q.144 **How oxygen enters in blood from alveoli of lungs?**
A) Pressure of CO_2
B) By hemoglobin
C) Simple diffusion
D) None of these

Q.145 **During inspiration, diaphragm:**
A) Contracts
B) Neither contracts nor expands
C) Expands
D) First contracts and then expands

Q.146 **When oxygen tension is 115 mm mercury hemoglobin is_____saturated**
A) 60%
B) 100 %
C) 98%
D) 20%

Q.147 Plasma proteins carry about_____CO2 from the body fluids to the lung capillaries:
A)2%
B) 5%
C) 3%
D) 10%

Q.148 Myoglobin is hemoglobin-like _____containing protein:
A) Oxygen
B) Iron
C) Carbon dioxide
D) All the above

Q.149 _____CO_2 is carried as carboxyhaemoglobin in human body:
A) 20%
B)50%
C) 40%
D) 70%

Q.150 What is common between myoglobin and hemoglobin
A) Cu
B) Mg
C) Mn
D) Fe

Q.151 Muscles of expiration is called
A) Diaphragm
B) Internal costal muscle
C) external intercostals muscle
D) abdominal muscle

Q.152 When blood leaves the capillary bed most of the carbon dioxide is in the form of
A) carbonate ions
B) bicarbonate ions
C) hydrogen ions
D) hydroxyl ions

Q.153 When you inhale, the diaphragm
A) relaxes and moves upward
B) relaxes and moves downward
C) contracts and moves upward.
D) contracts and moves downward

Q.154 With which other system do specialized respiratory systems most closely interface in exchanging gases between the cells and the environment?
A) the skin
B) the excretory system
C) the circulatory system
D) the muscular system

Q.155 Which of the following is the respiratory surface in human respiratory system:
A) larynx
B) trachea
C) bronchi
D) alveoli

Q.156 How is most of the oxygen transported in the blood?
A) dissolved in plasma
B) bound to hemoglobin
C) as bicarbonate
D) dissolved in water

Q.157 The lateral walls of the chest cavity of man are composed of the:
A) ribs
B) intercostal muscles
C) ribs and intercostal muscles
D) ribs, intercostal muscles and diaphragm

Q.158 Which of the following factors is the most effective in accelerating the rate of breathing in man?
A) a lack of oxygen in the blood
B) a lack of oxygen in the tissues
C) an excess of carbon dioxide in the lungs
D) an excess of carbon dioxide in the blood

Q.159 Which of the following changes will increase the body's rate of carbon dioxide excretion into the alveoli?
A) holding the breath
B) the breakdown of alveolar tissue as a result of disease
C) a decrease in the partial pressure of carbon dioxide in the alveolar air
D) a decrease in the pulmonary circulation

Q.160 Breathing is an example of
A) counter current exchange
B) cellular respiration
C) ventilation
D) diffusion

Q.161 Which event is not associated with the activity of expiration? 1
A) contraction of diaphragm
B) more dome like shape of diaphragm
C) backward and downward movement of rib cage
D) relaxation of external intercostals muscles

Q.162 Respiratory pigments

A) combine reversibly with only oxygen
B) all have four haem groups
C) attach to the alveolar wall
D) None of them

Q.163 Which sequence most accurately describes the sequence of airflow in the human respiratory system?

1. pharynx 2. bronchus 3.trachea 4.larynx 5.alveolus 6.bronchiole

A) 4, 1, 3, 2, 5, 6
B) 1, 4, 3, 2, 5, 6
C) 4, 1, 3, 2, 6, 5
D) 1, 4, 3, 2, 6, 5

ANSWERS

1.	D	2.	B	3.	C	4.	D	5.	A	6.	C	7.	A	8.	B
9.	B	10.	B	11.	B	12.	C	13.	B	14.	B	15.	C	16.	D
17.	B	18.	C	19.	D	20.	C	21.	C	22.	D	23.	C	24.	B
25.	B	26.	A	27.	C	28.	C	29.	C	30.	B	31.	C	32.	B
33.	C	34.	C	35.	D	36.	A	37.	B	38.	B	39.	A	40.	D
41.	A	42.	C	43.	B	44.	A	45.	B	46.	D	47.	C	48.	C
49.	C	50.	B	51.	D	52.	B	53.	A	54.	C	55.	D	56.	B
57.	A	58.	A	59.	A	60.	A	61.	C	62.	C	63.	A	64.	C
65.	C	66.	A	67.	D	68.	C	69.	B	70.	C	71.	C	72.	B
73.	C	74.	A	75.	C	76.	C	77.	D	78.	C	79.	D	80.	A
81.	D	82.	C	83.	D	84.	B	85.	C	86.	B	87.	B	88.	C
89.	C	90.	A	91.	C	92.	B	93.	A	94.	D	95.	C	96.	C
97.	A	98.	D	99.	B	100.	A	101.	C	102.	C	103.	A	104.	B
105.	B	106.	C	107.	C	108.	C	109.	B	110.	D	111.	C	112.	A
113.	A	114.	C	115.	A	116.	C	117.	C	118.	C	119.	A	120.	B
121.	C	122.	A	123.	D	124.	D	125.	C	126.	B	127.	C	128.	B
129.	B	130.	C	131.	B	132.	B	133.	B	134.	D	135.	A	136.	D
137.	C	138.	C	139.	C	140.	D	141.	C	142.	B	143.	D	144.	C
145.	A	146.	C	147.	B	148.	B	149.	A	150.	D	151.	B	152.	B
153.	D	154.	C	155.	D	156.	B	157.	C	158.	A	159.	C	160.	C
161.	A	162.	D	163.	D	164.		165.		166.		167.		168.	

Q.1 **Periplasmic space is present in;**
A) Only in Gram positive bacteria
B) Only in Gram negative bacteria
C) In some Gram positive and all Gram-negative
D) In some Gram negative and all Gram positive

Q.2 **Plasmids are essential for;**
A) Bacterial growth and metabolism
B) drug resistance and insect resistance
C) For bacterial growth only
D) All above

Q.3 **Bacterial spores are resistant to;**
A) Light and chemicals
B) Desiccation and pH
C) Temperature only
D) All above

Q.4 **Coagulation of microbial proteins is caused by;**
A) Antibiotics
B) Moist heat
C) Dry heat
D) Chemicals

Q.5 **Which of the following bacteria can detect and move in response to chemical signals;**
A) Atrichus
B) Flagellated
C) Aerobic
D) Anaerobic

Q.6 **In bacteria the complexes of layers external to the cell protoplasm are called;**
A) Cell envelope
B) Slime
C) Capsule
D) Cell wall

Q.7 **A waste material stored in storage bodies in the bacterial cell is in the form of;**
A) Lactic acid
B) Acetic acid
C) Alcohol
D) All of these

Q.8 **In bacterial cell, the mitochondria are;**
A) Few in number
B) Totally absent
C) Only two
D) Frequently present

Q.9 **Bacterial capsule is made up of repeated units;**
A) Amino acids
B) Triglycerides
C) Polysaccharides
D) Disaccharides

Q.10 **Which of the following give rigid structure to the bacteria;**
A) Slime
B) Capsule
C) Cell wall
D) Basal body

Q.11 **Bacterial chlorophyll is dispersed in the;**
A) Cytoplasm
B) Nucleus
C) Basal bodies
D) None of these

Q.12 **Chemical substances that inhibit the growth of microorganism in living tissue are called;**
A) Antiseptics
B) Disinfectants
C) Antibiotics
D) All Above

Q.13 **The bacterial cell membrane invaginates into the cytoplasm forming a structure called;**
A) Mesosomes
B) Peroxisomes
C) Glyoxisomes
D) None of these

Q.14 **Which of the following is common in both bacteria and virus:**
A) Nucleic acid as genetic material
B) Binary fision
C) Mitosis
D) Ribosomes

Q.15 **Which one of the following is not included in the envelope of bacteria:**
A) Cell wall
B) Pilli
C) Capsule
D) Slime

Q.16 **All of the followings are true about cysts of bacteria except**
A) Heat resistant
B) Thick walled
C) Desiccation Resistant
D) Formed during differentiation of vegetative cells

Q.17 **The protoplast of bacterial cell lack which of the following**
A) Nucleus
B) Ribosome
C) Plasmid
D) Mesosome

Q.18 **Substance used to kill microbes in living tissues**
A) Antiseptics
B) Disinfectants
C) Antibiotics
D) All of these

Q.19 **Which of the following is sterilized by membrane filters?**
A) Sera
B) Antibiotics
C) Hormones
D) All of these

Q.20 **One of the following is not used as chemotherapeutic**
A) Alcohol
B) Sulfonamides
C) Tetracycline
D) Penicillin

Q.21 **Which of the following is not found in all bacterial cells?**
A) A Nucleoid
B) Capsule
C) Cell membrane
D) Ribosomes

Q.22 _____ provides the greatest pathogenicity to bacteria:XZ
A) Capsule
B) Cell wall
C) Pili
D) Slime

Q.23 According to four-kingdom classification, the unicellular, non-nucleatd organisms are place in.
A) Monera
B) Protista
C) Plantae
D) Animalia

Q.24 The Moneran devoid of cell wall is.
A) Acinomycetes
B) Eubacteria
C) Mycoplasma
D) Archaebacteia

Q.25 Flagellum with single strand and composed of flagellin is found in.
A) Prokaryotes
B) Eukaryotes
C) both (a) and (b)
D) none of three

Q.26 Leeuwenhoek was the first person to observe bacteria. Who among the following obtained a pure culture of bacteria for the first time.
A) Lister
B) Ehrenberg
C) Pasteur
D) koch

Q.27 Some gram negative bacteria have peptdoycan and an extra layer of.
A) Lipo-polysaccharide
B) Lipo-protein
C) protein
D) both (a) and (b)

Q.28 Bacteria with flagella all over its body, is called.
A) Monotrichous
B) Amphirtrichous
C) Lophotrichous
D) Myxomycetes

Q.29 Maximum nutritional diversity is found in the group.
A) Monera
B) Plantae
C) Fungi
D) Animalia

Q.30 The cyanobacteria are also referred to as
A) Slim moulds
B) Blue green algae
C) Proteists
D) Golden algae

Q.31 The main difference between gram positive and gram-negative bacteria resides in the composition of.
A) Cilia
B) cell all
C) Nueleolus
D) cytoplasm

Q.32 Which of the following is a prokaryote?
A) Spirogyra
B) Rhizopus
C) Escherichia
D) Amoeba

Q.33 Who among the following developed a vaccine for the first time
A) Edward Jenner
B) Louis Pasteur
C) John Silk
D) J. Lister

Q.34 Which one of the following sets includes the bacterial diseases?
A) Cholera, typhoid, mumps
B) Tetanus, tuberculosis, measles
C) Malaria, mumps, poliomyelitis
D) Diphtheria, leprosy, plague

Q.35 Plasmids found in the cells of bacteria are molecules of.
A) DNA
B) RNA
C) Proteins
D) DNA bound by histoes

Q.36 Pili are the characteristic appendages of some.
A) Algae
B) Viruses
C) Bacteria
D) Mycoplasma

Q.37 The hyphae of rhizopusare
A) Unbrached, asepateate, and uninucleate
B) Brached, asepate and multinucleate
C) rached, septate and uninucleate
D) Unbrached, septate and coenocyptic

Q.38 Cyanobeacteriaare.
A) photoheterotrophs
B) photoautotrophs
C) Chemoautotrophs
D) Chemoheterotrophs

Q.39 The main difference between gram positive and gram negative bacteria is.
A) cell membrane
B) Cell wall
C) Ribosome
D) Mitochondria

Q.40 According to five kingdom classification bacteria belong to.
A) Protista
C) Plantae

B) Monera D) Archaea

Q.41 Archaebacteria differ from eubacteria in.
A) Cell membrance Structure C) cell shape
B) Mode of nutrition D) mode of reproduction

Q.42 Which structures perform the function of mitochondria in bacteria?
A) Nucleoid C) cell wall
B) Ribosmes D) Mesosomes

Q.43 The motile bacteria are able to move by
A) Fimbraie C) Cilia
B) Flagella D) Pili

Q.44 Cyanobacteria
A) are poisoned by oxygen C) have chlorophyll
B) are not widely distributed D) have chloroplast

Q.45 Cyanobacteria, unlike other types of bacteria that photosynthesize, do
A) not give off oxygen C) not have chlorophyll
B) give off oxygen D) not have a cell wall

Q.46 Pili are made up of pilin, which is
A) carbohydrates C) protein
B) lipids D) triglycerides

Q.47 Most pathogenic bacteria cause disease by A) directly destroying individual cells of the host
A) Directly destroying individual cells of he host
B) depriving the host of their nutrients
C) producing toxins
D) depriving the host of oxygen

Q.48 Chemosynthetic bacteria
A) are autotrophic C) oxidize inorganic compounds to acquire energy
B) use the sun rays D) both A and C are correct

Q.49 A bacterium with flagella all around
A) monotrichous C) amphitrichous
B) lophotrichous D) peritrichous

Q.50 Conjugation is facilitated by
A) capsule C) flagella
B) pili D) both pili and flagella

Q.51 Bacterial membrane differ from eukaryotic membrane in
A) lacking proteins C) lacking polysaccharide
B) lacking lipids D) lacking cholesterol

Q.52 Bacterial membrane also contains enzymes for
A) respiration C) protein synthesis
B) photosynthesis D) secretion

Q.53 Facultative anaerobes
A) require a constant supply of oxygen C) do not always need oxygen
B) are killed in an oxygenated environment D) are photosynthetic

ANSWERS

1.	C	2.	D	3.	D	4.	C	5.	B
6.	A	7.	D	8.	B	9.	C	10.	C
11.	A	12.	A	13.	A	14.	A	15.	B
16.	A	17.	A	18.	D	19.	B	20.	A
21.	B	22.	B	23.	A	24.	C	25.	A
26.	B	27.	A	28.	D	29.	A	30.	C
31.	B	32.	C	33.	A	34.	D	35.	A
36.	C	37.	B	38.		39.	B	40.	B
41.	A	42.	D	43.	B	44.	C	45.	B
46.	C	47.	A	48.	D	49.	D	50.	B
51.	D	52.	A	53.	D	54.		55.	

Q.1 **Which of the following hormones stimulates the maturation of reproductive structures in both male and female humans?**
A) Estrogen
B) Progesterone
C) FSH
D) Testosterone

Q.2 **In gonorrhea infected pregnant women virus can be transmitted to infant during:**
A) Pregnancy
B) Lactation
C) Development
D) Birth

Q.3 **In male, the production of sperm is a:**
A) Continuous process
B) Cyclic activity
C) Discontinuous process
D) Lasting until puberty

Q.4 **In human female, menstruation occurs when:**
A) Progesterone is secreted
B) Endometrium is vascularized
C) Progesterone diminishes
D) All of these

Q.5 **Ovulation occurs on _____ of menstrual cycle:**
A) 1st
B) 13th
C) 6th
D) Last

Q.6 **1st day of menstrual cycle will be:**
A) The day when ovulation occurs
B) The 1st day of menstrual bleeding
C) The last day of menstrual bleeding
D) The very next day after the menstrual bleeding ended

Q.7 **Factors that could disturb menstrual cycle are:**
A) Infection
B) Hormonal imbalance
C) Anemia
D) All the above

Q.8 **Embryo is implanted in:**
A) Uterus
B) Uterine tube
C) Placenta
D) Cervix

Q.9 **The neck of the vagina is:**
A) Uterus
B) Uterine tube
C) Cervix
D) Placenta

Q.10 **A pair of slender egg ducts that carry ovulated ova towards the uterus:**
A) Fallopian tubes
B) Oviduct funnel
C) Vas deferens
D) Seminal vesicles

Q.11 **Sterilization in males is called as:**
A) Tubectomy
B) IVF
C) Vasectomy
D) None of these

Q.12 **Ovulation is the release of secondary oocyte from:**
A) Mature follicle
B) Both 'a' & 'b'
C) Ovary
D) None of these

Q.13 **The completion of meiosis II in human egg formation will lead to the formation of:**
A) Single ovum
B) Single ovum + One 2nd polar body
C) Single ovum + One first polar body
D) Single ovum + Three 2nd polar bodies

Q.14 **One which also acts as gland:**
A) Vagina
B) Ovary
C) Uterus
D) Clitoris

Q.15 **Fertilization of the human egg occurs.**
A) Externally
B) In the cervix
C) In the vagina
D) In the oviduct

Q.16 **How many sperms and ova will be produced from 25 primary spermatocytes and 25 primary oocytes respectively?**
A)100 sperms and 50 ova
B)100 sperms and 25 ova
C)50 sperms and 25 ova
D)100 sperms and 100 ova

Q.17 **The primary oocyte divides meiotically into the.**
A) Haploid secondary oocyte
B) first polar body
C) Both a and b
D) None of these

Q.18 **How many polar bodies are produced by one primary oocyte in human?**
A) 1
B) 2
C) 3
D) 4

Q.19 **Which of the following hormone is secreted after ovulation?**
A) FSH
B) LH
C) Oestrogen
D) progesterone

Q.20 **Discharge of ovum from ovary is known as.**
A) Oogenesis
B) Spermatogenesis
C) Ovulation
D) Both a and c

Q.21 **Which phase of menstrual cycle ends with ovulation?**
A) Proliferation phase
B) Secretory phase
C) Menstruation phase
D) None of these

Q.22 **Ovulation is the liberation of the ovum from ovary into the.**
A) Peritoneal cavity
B) fallopian tube
C) Uterus
D) None of these

Q.23 **Females copoulatory organ.**
A) ovaries
B) vagina
C) clitoris
D) cervix

Q.24 **Menstruation usually lasts for.**
A) 3 - 5 days
B) 3 - 6 days
C) 3 - 7 days
D) None of these

Q.25 **Cessation of menstruation due to advance age is known ask.**
A) Menopause
B) Impotance
C) menarche
D) None of these

Q.26 **Pregnancy is maintained by high blood level of.**
A) Progesterone
B) Oxytocin
C) Lactogen
D) Both a and b

Q.27 **How many secondary spermatocytes will form 400 spermatozoa?**
A) 100
B) 40
C) 400
D) 200

Q.28 **Corpus luteum is formed by.**
A) Stroma cells
B) Follicle cells
C) Theca cells
D) Germinal cells

Q.29 **In the human female menstruation can be deferred by the administration of.**
A)Combination of FSH and LH
B) FSH only
C) Combination of estrogen and progesterone
D) LH only

Q.30 **Which of the following is secreted principally by the corpus leuteum of the human ovary?**
A) Luteinizing hormone
B) Testosterone
C) Follicle stimulating hormone
D) Progesterone

Q.31 **The 32 cells stage of the human embryo is.**
A) Smaller than the fertilized egg
B) Two times the size of the fellilized egg
C) Same size as the fertilized egg
D) Four times the size of the fertilized egg

Q.32 **If for some reason the vasa efferentia in the human reproductive system get blocked the gametes will not be transported from.**
A) Ovary to uterus
B) Testes to epididymis
C) Vagina to uterus
D) Epididymis to vas deferens

Q.33 **What is the location of interstitial cells in testes?**
A) Inside the seminiferous tubules
B) Among the germinal epithelial cells
C) Between the seminiferous tubules
D) Around the testes

Q.34 **A type of cells in human testes which produce testosterone are called:**
A) Sertoli cells
B) Germ cells
C) Spermatocytes
D) Interstitial cells

Q.35 **The hormone produced from corpus luteum is:**
A) Prolactin
B) Progesterone
C) Follicle stimulating hormone
D) Luteinizing hormone

Q.36 Testosterone is produced by which one of the following?
A) Sertoli cells
B) Interstitial cells
C) Germinal epithelium
D) Spermatogonia

Q.37 The oocyte released during ovulation is in:
A) Anaphase I
B) Metaphase I
C) Prophase I
D) Metaphase II

Q.38 Yellowish glandular structure formed after the release of egg from follicle is called:
A) Corpus callosum
B) Corpus luteum
C) Griffin follicle
D) Follicle atresia

Q.39 On puberty, the development of primary follicles is stimulated by:
A) ICSH
B) LH
C) FSH
D) Estrogen

Q.40 Causitive agent of a sexually transmitted disease that affects mucous membrane of the urinogenital tract is:
A) Staphylococcus aureus
B) Neisseria gonorrohea
C) Treponema pallidum
D) Escherichia coli

Q.41 In human testis, which structure is responsible for carrying sperm from inside the testis?
A) Seminiferous tubules
B) Seminal vesicle
C) Urinogenital duct
D) Vasa efferentia

Q.42 In which part of female reproductive system fertilization takes place?
A) Proximal part of oviduct
B) Placenta
C) Uterus
D) Vagina

Q.43 In females, FSH stimulates the ovary to produce:
A) Progesterone
B) Oestrogen
C) Lactin
D) Oxytocin

Q.44 In which phase of human female menstrual cycle, endometrium prepares for the implantation of embryo?
A) Proliferative phase
B) Secretary Phase
C) Menstrual phase
D) Ovulation phase

Q.45 Events of menstrual cycle are regulated by the:
A) Ethylene
B) Auxins
C) Gonadotrophins
D) Gibberellins

Q.46 Decrease of FSH and increase of estrogen cause pituitary gland to secrete:
A) Somatotropin
B) Testosterone
C) Luteinizing Hormone
D) Spermatogonium

Q.47 Transmission of *Neisseria gonorrhea* is best described by which one of the following?
A) Oro-fecal Route
B) Vector Borne
C) Unsafe Sex
D) Droplet Infection

Q.48 Where do sperms get matured?
A) In seminal vesicle
B) In epididymis
C) Seminiferous tubules
D) Vasa efferentia

Q.49 Conversion of spermatids into sperm is.
A) Spermiogenesis
B) Gametogenesis
C) Spermatogenesis
D) Metamorphosis

Q.50 Spermatogenesis is influenced by.
A) Progesterone
B) STH
C) FSH
D) LTH

Q.51 A type of cells in human testes which produce testosterone is called:
A) Interstitial cells
B) Sertoli cells
C) Germ cells
D) Spermatocytes

Q.52 Breakdown of endometrium during menstruation is due to:
A) Increase in level of LH
B) Increase in level of progesterone
C) Decrease in level of progesterone
D) Increase in level of oestrogen

Q.53 Oogonia are produced in:
A) Both uterus & cervix
B) Uterus
C) Cervix
D) Ovary

Q.54 **Luteinizing hormone triggers:**
A) Cessation of oogenesis
B) Ovulation
C) Breakdown of oocyte
D) Development of zygote

Q.55 **Syphilis is a sexually transmitted disease which is caused by:**
A) Neisseria gonorrhoeae
B) Treponema pallidum
C) E. coli
D) Mycobacterium avium

Q.56 **Discharge of ovum or secondary oocyte from ovary or from Graffian follicle is called:**
A) Fertilization
B) Follicle formation
C) Pollination
D) Ovulation

Q.57 **Second meiotic division in the secondary oocyte proceeds as far as:**
A) Metaphase
B) Anaphase
C) Prophase
D) Telophase

Q.58 **Which one of the followings differentiates directly into mature sperm?**
A) Primary spermatocyte
B) Spermatogonia
C) Secondary spermatocyte
D) Spermatid

Q.59 **Uterus opens into the vagina through:**
A) Cervix
B) External genitelia
C) Fallopian tube
D) Vulva

Q.60 **Spermatogonia differentiate directly into:**
A) Secondary spermatocytes
B) Primary spermatocytes
C) Spermatozoa
D) Spermatids

Q.61 **Treponema palladium causes:**
A) Gonorrhea
B) Genital herpes
C) AIDS
D) Syphilis

Q.62 **Syphilis is caused by:**
A) Spirochete
B) Water blooms
C) Nostoc
D) Cyanobacteria

Q.63 **AIDS is caused by:**
A) Bacteria
B) Fungi
C) Virus
D) Alga

Q.64 **The sperms are temporarily stored in**
A) Vas efferens
B) Epididymis
C) Vas deferens
D) Bladder

Q.65 **What do the ovaries produce?**
A) Semen
B) Sperm
C) Embryos
D) Egg cells

Q.66 **Which two events are important parts of each menstrual cycle?**
A) Ovulation & ejaculation
B) Menstruation & fertilization
C) Menstruation & ovulation
D) Fertilization & conception

Q.67 **How many sperm cells come out during an ejaculation?**
A) Just one
B) Thousands
C) Hundreds
D) Millions

Q.68 **In the normal male, there two of each of the following structures except:**
A) Epididymis
B) Prostate
C) Seminal vesicles
D) Vas deferens

Q.69 **Each oogonia containing 46 chromosomes produces how many mature fertilizable ova?**
A) Several millions
B) 400
C) 400,000
D) 1

Q.70 **How many spermatozoids will be produced from 10 spermatogonia and 10 secondary spermatocytes?**
A) 20 & 20
B) 20 & 10
C) 40 & 20
D) 10 & 20

Q.71 **Main duct of male reproductive tract in man is:**
A) Seminiferous tubule
B) Sperm duct
C) Vas deferens
D) Urethra

Q.72 **All of the following hormones are involved in the menstrual cycle except:**
A) Estrogen
B) Prolactin
C) LH
D) Progesterone

Q.73 The formation of sperms occurs at:
A) 37C°
B) 36C°
C) 34C°
D) 40C°

Q.74 Which one is not diploid?
A) Spermatogonium
B) Primary spermatocytes
C) Germinal epithelial cell
D) Secondary spermatocytes

Q.75 Which is the correct path of an unfertilized egg through the reproductive system?
A) Fallopian tube → Ovary → Uterus → Vagina
B) Ovary → Uterus → Vagina
C) Ovary → Uterus → Fallopian tube → Vagina
D) Ovary → Fallopian tube → Uterus → Vagina

Q.76 Which is the correct path of sperm through the male reproductive system?
A) Testes → Vas deferens → Epididymis → Urethra
B) Testes → Epididymis → Vas deferens → Urethra
C) Testes → Urethra → Epididymis → Vas deferens
D) Testes → Epididymis → Penis → Vas deferens

Q.77 Which statement about egg production is incorrect?
A) Meiosis is not completed until after the egg is fertilized
B) At birth, a female has all the eggs she will ever have
C) Each developing egg is surrounded by a follicle that helps the egg to mature
D) Four eggs result from meiosis

Q.78 How is meiosis in sperm production different from meiosis in egg production?
A) In sperm production, one gamete and three polar bodies are formed
B) In egg production, meiosis begins at puberty
C) In the male, gametes mature before birth
D) In sperm production, four equal gametes are produced

Q.79 Why can't viral STDs be treated with antibiotics?
A) They never cause symptoms, so the person does not know he or she is infected
B) They destroy the antibiotics
C) The viruses hide inside cells where antibiotics cannot reach
D) Antibiotics have no effect on viruses

Q.80 Copulatory organ in human males is called:
A) Penetrating device
B) Glans penis
C) Penis
D) Vulva

Q.81 Two principal functions of the testis are:
A) Produce sperm
B) Both 'a' & 'b'
C) Produce testosterone
D) None

Q.82 The sperm maturation site is:
A) Seminiferous tubules
B) Prepuce
C) Epididymis
D) Seminal vesicles

Q.83 Loose fold of skin encircling the glans penis is called:
A) Scrotum
B) Prepuce
C) Epididymis
D) Membranous Urethra

Q.84 In human females, egg at _____ stage is released from ovaries:
A) Secondary oocyte
B) Primary oocyte
C) Mature ovum
D) Oogonium

Q.85 In human females, meiosis in oogenesis produces _____ egg(s):
A) 4
B) 2
C) 3
D) 1

Q.86 Which is not included in external genitalia of human female?
A) Ovaries
B) Uterus
C) Oviduct
D) All of these

Q.87 Conversion of primary spermatocytes to secondary spermatocytes involves:
A) Differentiation
B) Meiosis I
C) Mitosis
D) Meiosis II

Q.88 First polar body is produced alongside:
A) Oogonium
B) Secondary oocyte
C) Primary oocyte
D) Mature ovum

Q.89 **Pathway of sperms in human males is?**
A)Internal urethra → Epididymis → Vas deferens → Seminiferous tubules
B) Seminiferous tubules → Epididymis → Vas deferens → Internal urethra
C) Epididymis → Seminiferous tubules → Vas deferens → Internal urethra
D) Seminiferous tubules → Vas deferens →Epididymis → Internal urethra

Q.90 **Stimulates ovulation:**
A) Testosterone
B) Luteinizing hormone (LH)
C) Progesterone
D) Follicle stimulating hormone (FSH)

Q.91 **Which is not a function of estrogen?**
A) It causes the fallopian tubes to develop
B) It controls the development of female sexual characteristics
C) It causes egg cells to develop before leaving the ovaries
D) It prepares the uterus for pregnancy

Q.92 **Fertilization occurs in the proximal part of:**
A) Oviduct
B) Uterine tube
C) Fallopian tube
D) All of these

Q.93 **Primary oocytes in females are formed by the mitotic division of**
A) Secondary oocytes
B) Germ cells
C) Oviduct
D) Oogonia

Q.94 **Second meiotic division in the oocytes is not completed until**
A) Metaphase is reached
B) It is differentiated
C) It becomes mature
D) It is fertilized by sperm

Q.95 **Which of the following is the function of estrogen?**
A) Thickening and vascularization of uterine walls
B) Sends negative feedback to FSH
C) Stimulates the release of LH from anterior pituitary
D) All the above

Q.96 **One which has no relation to menstrual cycle:**
A) FSH
B) LTH
C) LH
D) Progesterone

Q.97 **Sexually transmitted diseases can be controlled or prevented by avoiding sexual contacts with:**
A) Carriers
B) Normal persons
C) Affected persons
D) Both 'a' & 'b'

Q.98 **Genital herpes is caused by:**
A) Retrovirus
B) DNA virus
C) Virion
D) All of these

Q.99 **Pathogen causing Gonorrhea, mainly affect:**
A) Ovaries
B) Urinogenital tract
C) Oviducts
D) Uterus

Q.100 **Sertoli cells are found in**
A) seminiferous tubules
B) seminal vesicle
C) between interstitial cells
D) epididymis

Q.101 **Fertilization of the ovum normally occurs:**
A) in distal part of oviduct
B) in proximal part of oviduct
C) along the uterine wall
D) successfully in vagina

Q.102 **Embryo implants in the _____ of the uterus**
A) perimetrium
B) myometrium
C) endometrium
D) cervix

Q.103 Spermatozoa are stored prior to emission and ejaculation in
A) epididymis
B) seminal vesicle
C) urethra
D) prostate gland

Q.104 **The cervix is a portion of**
A) ovary
B) vagina
C) uterus
D) fallopian tube

Q.105 On which date is a woman most likely to ovulate if the first day of menstrual loss was first March?
A) 5 March
B) 14 March
C) 20 March
D) 28 March

Q.106 If ruptured mature follicle is degenerated without forming corpus luteum, which of the following is expected?
A) ovulation will not occur
B) menstruation will not occur
C) pregnancy is established
D) follicular atresia

Q.107 How does a zygote differ from an ovum?
A) A zygote has diploid number chromosomes
B) A zygote is smaller
C) A zygote consists of more than one cell
D) A zygote is much larger

ANSWERS

1.	C	2.	D	3.	A	4.	C	5.	B	6.	B	7.	D	8.	A
9.	C	10.	A	11.	C	12.	B	13.	D	14.	B	15.	D	16.	B
17.	C	18.	C	19.	B	20.	C	21.	A	22.	B	23.	B	24.	C
25.	A	26.	A	27.	D	28.	B	29.	C	30.	D	31.	C	32.	B
33.	C	34.	D	35.	B	36.	B	37.	D	38.	B	39.	C	40.	B
41.	D	42.	A	43.	B	44.	B	45.	C	46.	C	47.	C	48.	B
49.	A	50.	C	51.	A	52.	C	53.	D	54.	B	55.	B	56.	D
57.	A	58.	D	59.	A	60.	B	61.	D	62.	A	63.	C	64.	B
65.	D	66.	C	67.	D	68.	B	69.	D	70.	C	71.	C	72.	B
73.	C	74.	D	75.	D	76.	B	77.	D	78.	D	79.	D	80.	C
81.	B	82.	C	83.	B	84.	A	85.	D	86.	D	87.	B	88.	B
89.	B	90.	B	91.	A	92.	D	93.	D	94.	D	95.	D	96.	B
97.	D	98.	B	99.	B	100.	A	101.	B	102.	C	103.	C	104.	C
105.	B	106.	D	107.	A	108.		109.		110.		111.		112.	

Q.1 **Thin filaments of muscles contain _____ chains of actin molecule.**
A) Two
B) Three
C) One
D) Four

Q.2 **The thick filaments in a myofibril of muscles are made of _____.**
A) Myoglobin
B) Actin
C) Myosin
D) Haemoglobin

Q.3 **The function of calcium ions in muscle contraction is to.**
A) Polarize visible light
B) Aid in the transmission of nerve impulse
C) Bind to troponin molecule and cause them to move
D) Bind to tropomyosin molecule and cause them to from cross bridges

Q.4 **What causes a sarcomere to shorten?**
A) Myosin pulls actin, and actin pulls the sarcomere's ends toward the middle
B) Actin pulls myosin, and myosin pulls the sarcomere's ends toward the middle
C) Actin and myosin pull together toward the center of the sarcomere
D) The Z-line pulls on the M-line and causes the sarcomere to contract

Q.5 **Sarcoplasm of muscle fibres differs from the cytoplasm of the other cells as it contains usually:**
A) Large amount of stored starch
B) A unique oxygen binding protein, myoglobin
C) Hemoglobin that stores oxygen
D) Large amount of stored lipids

Q.6 **Myofibrils run in parallel fashion and extend entire length of the:**
A) Muscle bundle
B) Muscle
C) Muscle fibre or cell
D) Myofilament

Q.7 **Bundles of myofibrils are enclosed by the:**
A) Muscle cell membrane
B) Nuclear membrane
C) Sarcolemma
D) Muscle cell membrane or sarcolemma

Q.8 **The light band of sarcomere is called:**
A) H band
B) A band
C) 1 band
D) M band

Q.9 **Light and dark bands of muscles give the muscle cell as a whole its:**
A) Strength
B) Striped appearance
C) Nourishment
D) Protection

Q.10 **A sarcomere is the region of a myofibril between two successive:**
A) A-line
B) H-line
C) Z-line
D) M-line

Q.11 **Myofibrils contain:**
A) Myofilaments
B) Thick filament
C) Thin filament
D) Muscle fibres

Q.12 **The diameter of thick filament is:**
A) 16 pm
B) 7-8 nm
C) 1-2 1..tm
D) 16 nm

Q.13 **Each myosin molecule has a tail terminating in:**
A) Two Globular head
B) A globular head
C) Two linear heads
D) A linear head

Q.14 **Globular heads of myosin filaments link the thick and the thin myofilaments together during contraction, that is why they are sometimes called:**
A) Cross links
B) Cross bridges
C) Cross connection
D) Cross heads

Q.15 Thin filaments have a diameter of:
A) 1-2 pm
B) 10-60 pm
C) 7-8 nm
D) 16 nm

Q.16 Thin filaments are composed chiefly of:
A) Actin
B) Tropomyosin
C) Troponin
D) Actin, Tropomyosin and troponin

Q.17 Out of three polypeptides of troponin one binds to actin chain, another binds to Tropomyosin while third binds:
A) Myosin
B) Collagen
C) Sodium ions
D) Calcium ions

Q.18 The hypothesis to explain all events involved in muscle contraction was suggested by:
A) H. Huxley
B) H. Huxley and A.F Huxley
C) A.F. Huxley
D) H. Huxley and A.F Huxley and their colleagues

Q.19 During muscle contraction the cross bridges of thick filaments become attached to
A) Myosin filament
B) Binding sites on actin filament
C) Binding sites of myosin filament ---
D) Actin filament

Q.20 Calcium ions bind with the troponin molecule and cause them to:
A) Extend
B) Contract
C) Move slightly
D) Remain in the same position

Q.21 Once the myosin head has become attached to the actin filament:
A) ATP is synthesized and the bridge goes to its cycle
B) ATP is hydrolyzed and the bridge to its cycle goes
C) ATP is synthesized and the bridge becomes fixed
D) ATP is hydrolyzed and the bridge becomes fixed

Q.22 How do skeletal muscles move bones?
A) When they contract, they push on the bones in a joint
B) When they contract, they lengthen and move the bones in a joint
C) When they contract, they pull on bones in a joint
D) When they contract, they pull on ligaments attached to bones

Q.23 How does smooth muscle appear different from cardiac muscle under a microscope?
A) Smooth muscle tissue has oval-shaped cells with many nuclei
B) Smooth muscle tissue has rectangular cells with one nucleus
C) Smooth muscle tissue has dark bands and cells with many nuclei
D) Smooth muscle tissue has no bands and has cells with one nucleus

Q.24 What role does a calcium ion play in muscle contraction?
A) A Ca^{++} binds to regulatory proteins and exposes sites on actin for myosin to grab
B) A calcium ion is part of an enzyme that binds actin to myosin
C) Channels in the muscle fiber open in the presence of a Ca^{++} to let actin into the fiber
D) A calcium ion causes actin to be released from the Z-line so it can contract

Q.25 Skeletal muscle whose contraction bends a joint is called:
A) Extensor
B) Antagonistic
C) Flexor
D) None of these

Q.26 Which of the following is not a flexor muscle?
A) Bicep
B) Brachialis
C) Brachioradilus
D) Tricep

Q.27 A skeletal muscle whose contraction extends or stretches a body part is called:
A) Extensor
B) Antagonistic
C) Flexor
D) None of these

Q.28 Which of the following is an extensor muscle?
A) Bicep
B) Brachialis
C) Brachioradilus
D) Tricep

Q.29 Which of the following is inserted in the ulna?
A) Bicep
B) Brachialis
C) Brachioradilus
D) Tricep

Q.30 One which is not a part of thin filament?
A) Actin
B) Troponin
C) Myosin
D) Tropomyosin

Q.31 Muscles involved in contraction of heart in human
A) Cardiac muscles
B) Smooth
C) Ciliary muscles
D) Striated

Q.32 Muscles are bounded to joints by:
A) Cartilage
B) Ligaments
C) Tendons
D) Myosin fibers

Q.33 T-tubule and the terminal portion of the adjacent envelope of sarcoplasmic reticulum make:
A) T-system
B) Motor unit
C) Sarcomere
D) Triad

Q.34 The A-band of striated muscle represents:
A) Myosin only
B) Both 'a' & 'b'
C) Actin only
D) Calcium channels

Q.35 The Sarcoplasm contains:
A) Myoglobin
B) Both 'a' & 'b'
C) Glycogen
D) None of these

Q.36 All the fibrils of a muscle fiber participate in contraction; it is:
A) Induce fit model
B) Varying degree principal
C) All or none principal
D) None of these

Q.37 When the calcium gates of the SR open, they release calcium ions into the:
A) Cytosol
B) Both 'a' & 'b'
C) Sarcoplasm
D) Myofilament

Q.38 When the muscle is at rest, the _____ is disposed in such a way that it covers the sites on the actin chain:
A) Troponin
B) Myosin
C) Tropomyosin
D) Ca^{2+}

Q.39 What about smooth muscles is wrong?
A) Involuntary
B) Multinucleated
C) Spindle shaped cells
D) Non-striated

Q.40 Muscles found in umbilical cord are:
A) Voluntary
B) Skeletal
C) Cardiac
D) Smooth

Q.41 When the muscle is required to contract, it needs
A) Ca^{++} to bind with tropomyosin
B) Exposing the binding sites for troponin
C) Displacement of Tropomyosin
D) All of these

Q.42 All the muscle fibers are innervated by:
A) Single sensory neuron
B) Sensory unit
C) Group of many sensor neurons
D) Same motor nerve

Q.43 The function of the T tubules in muscle contraction is to:
A) Carry the impulse into the myofibrils of the muscle cell
B) Release calcium
C) Release sodium ions
D) Split ATP

Q.44 At the start of a muscle contraction, calcium ions are released from:
A) Acting
B) The motor neuron
C) The T Tubule
D) The sarcoplasmic reticulum

Q.45 Which of the following chemicals are necessary to sustain a muscle contraction:
A) Actin, myosin, calcium ions
B) Actin, ATP, myoglobin,
C) Actin, myosin, ADP
D) Myosin, ATP, myoglobin

Q.46 To which of the following cellular components dose calcium bind to initiate a muscular in smooth muscle:
A) Actin
B) Tropomyosin
C) Troponin
D) Calmodulin

Q.47 Thin filaments in myofibrils consist of:
A) Actin and accessory proteins
B) Cross-bridges
C) Sarcomeres
D) Z lines

Q.48 Which of the following changes occurs when a skeletal muscle contracts?
A) The a bands shortens
B) The Z lines slide farther apart
C) The I bands shortens
D) The thin filaments contract

Q.49 All of the following cellular events involves actin filaments EXCEPT:
A) Amoeboid movement
B) Contraction in smooth muscles
C) Cytoplasmic streaming
D) Flagellar movement in bacteria

Q.50 All of the following are found in vertebrate smooth muscle except:
A) Sarcomeres
B) Thick filament
C) Thin filament
D) Tropomysin

Q.51 The sarcomere is the functional contratile unit found in:
A) Nuclie
B) Myofibril
C) Capillary
D) Sarcoplasmic reticulum

Q.52 The function unit of contractile system of a striated muscle:
A) Sarcomere
B) Sarcosome
C) Z-band
D) Myofibril

Q.53 Sarcomere is distance between:
A) Two I-band
B) Two Z-band
C) A and I band
D) Z and A band

Q.54 The fundamental repeating unit of a skeletal myofibril is the:
A) Sarcomere
B) Sarcoplasmic reticulum
C) Motor unit
D) Myosin cross bridge

Q.55 The deep inflodings of muscle fiber membranes that conduct action potentials are called:
A) Sarcoplasmic reticula
B) Myofilaments
C) Z lines
D) T tubules

Q.56 Smooth Muscle is:
A) Voluntary and spindle shaped
B) Involuntary and spindle shaped
C) Voluntary and striated
D) Involuntary and striated

Q.57 Skeletal Muscle is:
A) Voluntary and spindle shaped
B) Involuntary and spindle shaped
C) Voluntary and striated
D) Involuntary and striated

Q.58 Cardiac Muscle is:
A) Voluntary and spindle shaped
B) Involuntary and spindle shaped
C) Voluntary and striated
D) Involuntary and striated

Q.59 Which type of muscle cell is multinucleated?
A) Cardiac
B) Skeletal
C) Smooth
D) All of the above

Q.60 During the muscle contraction which zone decreases?
A) I-zone
B) H-zone
C) Z-zone
D) M-zone

Q.61 The role of calcium ions in muscle contraction is to:
A) Facilitate the binding of ATP
B) Trigger depolarization of the membrane of muscle fibers
C) Binding to a regulatory protein associated with actin, allowing cross bridges with myosin to form
D) Promote release of vesicles containing transmitter molecules

Q.62 The reason that an A bond with in a sarcomere appears darker than adjacent I bands is that:
A) Myofibrils are narrow in diameter at I bands.
B) Multiple nuclei tend to cluster within the A bands
C) The cell membrane is more opaque near A bands
D) A bands contain both actin and myosin, where as I bands do not

Q.63 Muscles is made up of many cells which are referred to as:
A) Myofilaments
B) Sarcolemma
C) Myofibrils
D) Muscles fiber

Q.64 The length of myofibril from one Z-band to the next is known as:
A) Sarcomere
B) Sarcoplasm
C) Sarcolemma
D) Muscle fiber

Q.65 The calcium ions released during a muscle fiber contraction attach with:
A) Myosin
B) Tropomyosin
C) Actin
D) Troponin

Q.66 A muscle condition resulting from the accumulation of lactic acid and ionic imbalance is called:
A) Tetany
B) Cramp
C) Muscle fatigue
D) Tetanus

Q.67 Each muscle fibre is surrounded by a membrane which is called:
A) Sarcomere
B) Twitch fibre
C) Sarcolemma
D) Capsule

Q.68 When calcium ions are released from the sarcoplasmic reticulum they bind with _____ during muscle contraction:
A) Tropomyosin
B) Cytosol's ions
C) Sarcolemma
D) Troponin

Q.69 The repeated protein pattern of myofibrils is called:
A) Sarcomere
B) Sarcolemma
C) Zyomere
D) Cross bridges

Q.70 When more energy is required in muscle contraction then that energy can also be produced by as secondary source:
A) Glucose
B) Fructose
C) Phosphocreatine
D) Lactic acid

Q.71 The sarcolemma of muscle fiber folds inwards and forms a system of tubes which runs through the sarcoplasm called:
A) Myofilament
B) Z-lines
C) Sarcoplasmic reticulum
D) Transverse tubules

Q.72 According to sliding filament theory, when muscle fibers are stimulated by nervous system, which of the following changes occurs?
A) I-bands shorten
B) Z-lines move further apart
C) H-zone becomes more visible
D) A-bands broaden

Q.73 When a muscle is at rest, what blocks myosin from binding to actin?
A) Acetylcholine
B) Ca^{++}
C) ATP
D) Tropomyosin

Q.74 Muscles are connected to bones by:
A) Cross-bridges
B) Tendons
C) Ligaments
D) Sutures

Q.75 An actin filament consists of how many rows of actin proteins wrapped around each other?
A) 2
B) 10
C) 4
D) Hundreds

Q.76 What changes shape when myofilaments contract?
A) Actin filaments
B) Myosin heads
C) Z lines
D) All of the above

Q.77 What is attached to Z lines in a sarcomere?
A) Myosin heads
B) Myosin tails
C) Actin filaments
D) Cross-bridges

Q.78 The contracting units of a myofibril are called:
A) Muscle cells
B) Sarcoplasms
C) Extensors
D) Sarcomeres

Q.79 The contractile protein of skeletal muscle involving ATPase activity is
A) Troponin
B) Myosin
C) Tropomyosin
D) Fibrin

Q.80 The atlas and axis vertebrae are located in:

A) lumbar region
C) thoracic region
B) cervical region
D) pelvic region

Q.81 Skeletal muscles contain dark band, which are anisotropoic, are called

A) A band
C) Z band
B) I band
D) M line

Q.82 The acetabulum provides the articular surface for the

A) humerus
C) pelvis
B) femur
D) fibula

Q.83 Scapula is connected with sternum by

A) ribs
C) clavicle
B) carpals
D) atlas

Q.84 Which statement correctly describes the smooth muscles?

A) Unstriated involuntary with spindle shape cells
B) Unstriated involuntary with multinucleate cells
C) Unstriated voluntary with uninucleate cells
D) Striated involuntary with spindle shape cell

Q.85 Thin myofilaments consist of

A) actin, myosin, troponin
C) actin, tropomyosin, fibrin
B) actin, tropomyosin, troponin
D) actin, myoglobin, troponin

Q.86 Which of the following changes occur when skeletal muscle contracts?

A) The A- bands shorten
C) The Z- lines move further apart
B) The I- bands shorten
D) The H- zone becomes more visible

Q.87 A human internal organs are protected mainly by the

A) hydrostatic skeleton
C) exoskeleton
B) axial skeleton
D) appendicular skeleton

Q.88 Arm and leg muscles are arranged in antagonistic pairs. How does this affect their functioning

A) it provides a backup if one of the muscles is injured
B) one muscle of the pair pushes while the other pulls
C) it allows the muscles to produce opposing movements
D) it doubles the strength of contraction

Q.89 which of the following bones in the human arm would correspond to the femur in the leg"?

A) radius
C) tibia
B) ulna
D) humerus

Q.90 The deep enfolding of the muscle fibre membrane is called

A) sarcoplasmic reticule
C) T-tubules
B) Z lines
D) sarcomeres

Q.91 Bone dissolving cells are called

A) chondrocytes
C) osteoclasts
B) osteoblasts
D) osteocytes

Q.92 Which of the following cartilage is found at the end of long bones?

A) calcified
C) elastic
B) fibrous
D) hyaline

Q.93 At times ligaments are overstretched or torn. It is called
A) sprain
B) dislocation
C) fracture
D) tension

Q.94 Which ion is essential for muscle contraction?
A) Na
B) K
C) Ca
D) Cl

ANSWERS

1.	A	2.	C	3.	C	4.	A	5.	B	6.	C	7.	D	8.	C
9.	B	10.	C	11.	A	12.	D	13.	A	14.	B	15.	C	16.	A
17.	D	18.	D	19.	B	20.	C	21.	B	22.	C	23.	D	24.	A
25.	C	26.	D	27.	A	28.	D	29.	B	30.	C	31.	A	32.	C
33.	D	34.	B	35.	B	36.	C	37.	A	38.	C	39.	D	40.	D
41.	C	42.	D	43.	A	44.	D	45.	A	46.	D	47.	A	48.	C
49.	D	50.	A	51.	B	52.	A	53.	B	54.	A	55.	D	56.	B
57.	C	58.	D	59.	B	60.	B	61.	C	62.	D	63.	D	64.	A
65.	D	66.	C	67.	C	68.	D	69.	A	70.	C	71.	D	72.	A
73.	D	74.	B	75.	A	76.	B	77.	C	78.	D	79.	B	80.	B
81.	A	82.	B	83.	C	84.	A	85.	C	86.	B	87.	B	88.	C
89.	D	90.	C	91.	C	92.	C	93.	C	94.	C	95.		96.	

Q.1 **Haemophilia B is due to disturbance in factor**
A) VIII
B) XI
C) IX
D) None of these

Q.2 **Haemophilia C effect both sexes equally because it is**
A) X- linked recessive trait
B) An autosomal recessive trait
C) X-linked dominant trait
D) X and Y-linked trait

Q.3 **Cone cells have specific light absorbing proteins called**
A) Pepsin
B) Opsins
C) Tubulin
D) Myosin

Q.4 **Gene for blue opsin is present on autosome number**
A) 7
B)9
C) 21
D) II

Q.5 **True colour - blindness is**
A) Monochromacy
B) Both a and b
C) Dichromacy
D) None of these

Q.6 **Tritanopia is_____blindness.**
A) Red
B) Blue
C) Green
D) Both a and b

Q.7 **F2 generation in a mendelian cross showed that both genotypic and phenotypic ratios are same as 1:2:1, it represents a case of.**
A) Monohybrid cross with complete dominance
B) Monohybrid cross with incomplete dominance
C) Co-dominance
D) Dihybrid cross

Q.8 **A test cross is carried out to.**
A) Predict whether two traits are linked
B) Assess the number of alleles of a gene
C) Determine whether two species or varieties will breed successfully
D) Determine the genotype of a plant at F2

Q.9 **A sex-linked recessive allele "c" produces red-green colour blindness. Its normal dominant allele is "C". A normal woman whose father was Colour blind marries a colour blind man. What proportion of their children can have normal colour vision?**
A) 25%
B) 75%
C)50%
D) 100%

Q.10 **If a carrier haemophilic female (X^HX^h x X^hY) is married to a hemophilic male (X^hY) what will be the ratio of presence of haemophilia in the children select best answer from given condition.**
A) 100% all females and males will be haempohilic
B) females have 50% chances of getting haemophilic and males will be 100% haemophilic
C) Carrier female 25% . 25% normal male and 25% haemophilic male only
D) Females and males both have 50% chances of getting haemophilic

Q.11 **In genetics the term locus refers to the _ _____ of the gene on the chromosome.**
A) Position
B) Frequency
C) Copy
D) Inversion

Q.12 **A person was married to his cousin and both are heterozygous for sickle cell anemia .among their four kids what will be proportion of affected homozygotes.**
A)75%
B)100%
C)50%
D)25%

Q.13 **Blood group AB is an example of _____ .**
A) Complete dominance
B) Co-dominance
C) Recessive alleles
D) Incomplete dominance

Q.14 **When two or more alleles do not show complete dominance or both the alleles are expressing independently in heterozygotic condition such a condition is called.** 2018
A)Complete dominance
B)Co dominance
C)Over dominance
D)Incomplete dominance

Q.15 **Which one of the following is multiple allelic character.**
A) Colour of flower in plant
C) Blood group of the human being

B) Shape of seed in pea plant
D) Length of stem in pea plant

Q.16 There are --------- number of linkage groups in human.
A)46
B)80
C)22
D)23

Q.17 Chance of a cross over between two loci is directly proportional to their.
A) Thickness
B) Length
C) Width
D) Distance

Q.18 _____ is the exact position of a gene on the chromosome.
A) Trait
B) Genotype
C) Ceotromcre
D) Locus

Q.19 Suppose a white-furred rabbit breeds with a black-furred rabbit and all of their offspring have a phenotype of gray fur. What does the gene for fur color in rabbits appear to be an example of?
A) Codominance
B) Incomplete dominance
C) Over dominance
D) Complete dominance

Q.20 In the ABO blood group system in humans, if a person of type-B blood has children with a person of type-AB blood, what blood types could their children have?
A) Type-AB, type-A, and type-B
B) Type-B and type-AB
C) Type-A and type-B
D) Type-AB, type-A, type-B, and type-O

Q.21 A gene for corn has two alleles, one for yellow kernels and one for white kernels. Cross pollination of yellow corn and white corn results in ears of corn that have an approximately even mix of yellow and white kernels. Which term best describes the relationship between the two alleles?
A) Incomplete dominance
B) Over dominance
C) Genetic recombination
D) Codominance

Q.22 In pea plants, purple flowers are dominant to white flowers. If two white flowered plants are cross, what percentage of their offspring will be white flowered?
A) 0%
B) 50%
C) 25%
D) 100%

Q.23 Based on what you have learned about Mendel's experiments with pea plants, which of the following statements is not correct?
A) The allele for wrinkled seeds is recessive to allele for smooth seeds
B) White flowers and purple flowers are determined by different alleles of the same gene
C) The gene for wrinkled seeds is an allele of the gene for purple seeds
D) The alleles for smooth seeds and purple flowers are dominant

Q.24 Suppose that in barley plants, the allele for tall stalks is dominant over short stalks and the allele for wide leaves is dominant over thin leaves. What would be the best way to determine the genotype of a barley plant with a tall stalk and wide leaves?
A) Perform a testcross with a barley plant that has a short stalk and thin leaves
B) Perform a testcross with a barley plant that has a tall stalk and wide leaves
C) Perform a testcross with a known heterozygous barley plant
D) Perform a testcross with a barley plant that has a tall stalk and thin leaves

Q.25 If a homozygous red flowered plant is crossed with a homozygous white flowered plant the offspring will be.
A)half white flowered
B)all white flowered
C)half red flowered
D)all red flowered

Q.26 Mendel was not able to say anything about recombination and crossing over because.
A)He did not have a large and strong microscope
B)He chose only pure type
C)Traits he chose were not linked and present on different chromosomes or were far apart
D) Traits he chose had no genes

Q.27 Agglutination is:
A) Resolution of clot
B) Clumping of RBC's
C) Haemolysis
D) None

Q.28 If genotype of two traits is Gg BB, the possible gametes are:
A) GB, gB
B) G g, BB
C) Gg,BB
D) Gb, gb, GB, gB

Q.29 Different alleles of a gene that are both expressed in a heterozygote are called:
A) Complete dominance
B) Incomplete dominance
C) Co-dominance
D) Over dominance

Q.30 All the genes found in breeding population at a given time:
A) Population
B) Genome
C) Gene pool
D) Genomic liberary.

Q.31 Which trait in human is an example of multiple alleles?
A) Eye colour
B) ABO- blood group
C) skin colour
D) Rh-blood group

Q.32 When the presence of a gene at one locus suppresses the effect of a gene at another locus, the phenomenon is called:
A) Hypostasis
B) Epistasis
C) Pleiotropy
D) Epitropy

Q.33 The gene for ABO-blood group system in humans is represented by symbol:
A) X
B) Y
C) I
D) O

Q.34 In men sex-determination depends upon the nature of:
A) Heterogametic male
B) Heterogametic female
C) Homogametic female
D) Homogametic male

Q.35 When a gene suppresses the effect of another gene at another locus, the phenomenon is termed as:
A) Over-dominance
B) Pleiotropy
C) Epistasis
D) Co-dominance

Q.36 Position of an allele within a DNA molecule is:
A) Locus
B) Amplicon
C) Origin
D) Filial

Q.37 Blood group antigen contains:
A) Glycoprotein
B) Glycolipid
C) Phospholipids
D) Sphingomylin

Q.38 ABO blood system is an example of:
A) Polygenes
B) Multiple alleles
C) Multiple genes
D) Multiple mutation

Q.39 Which one of the following is X-linked trait?
A) Male pattern baldness
B) Haemophilia
C) Diabetes mellitus
D) Erythroblastosis foetalis

Q.40 A character determined by three alleles is:
A) Human skin colour
B) Human eye colour
C) Human blood group
D) Human Rh factor

Q.41 The total number of genes in a population is called:
A) Gene pool
B) Genome
C) Allele pool
D) Genomic library

Q.42 _____ Starting with a P generation with the following genotypes (AABB x aabB). Based on classical Mendelian inheritance, what is the expected phenotypic ratio observed among the F2 progeny?
A) 9:3:3:1
B) 3:1
C) 1:2:1
D) 1:1

Q.43 Which statement about a test cross is not true?
A) It tests whether an unknown individual is homozygous or heterozygous.
B) The test individual is crossed with a homozygous recessive individual.
C) If the test individual is heterozygous, the progeny will have a 1:1 ratio.
D) If the test individual is homozygous, the progeny will have a 3:1 ratio.

Q.44 The ABO blood groups in humans are determined by a multiple allelic system where *IA* and *IB* are co dominant and dominant to *IO*. A newborn infant is type A. The mother is type O. Possible genotypes of the father are:
A) A, B or AB
B) O only
C) A, B or O
D) A or AB

Q.45 **If the opposite alleles come together one of these expresses itself masking the other this fact is described as law of.**
A) Dominance
B) Limiting factors
C) Inheritance
D) Segregation

Q.46 **Epistatic effect in which the dihybrid cross 9:3:3:1 AaBbxAaBa is modified as.**
A)Interaction between two allele of the same loci
B) Dominance of one allele on another allele of the same loci
C)Interaction between two alleles of different loci
D)Dominance of one allele on another allele of both loci

Q.47 **Phenotype of an organism is the result of.**
A) Mutations and linkages
B) Cytoplasmic effects and nutrition
C)Environmental changes and sexual dimorphism
D)Genotype and environment interactions

Q.48 **A woman with normal vision but whose father was colour blind marries a colourblind man suppose that the fourth child of this couple was a boy. This boy.**
A) Must have normal colour vision
B) Will be partially colourblind since he is heterozygous for the colourblind mutant allele
C) Must be colourblind
D) May be colourblind or may be of normal vision

Q.49 **Albinism is known to be due to an autosomal recessive mutation. The first child of a couple with normal skin pigmentation was an albino what is the probability that their second child will also be an albino.**
A)100%
B)50%
C)25%
D)75%

Q.50 **A cross used to ascertain whether a dominant is homozygous or heterozygous is termed.**
A) test cross
B) Back cross
C) Reciprocal
D) Linkage cross

Q.51 **The seeds taken by mendel in his dihybrid cross were.**
A) Green round and yellow wrinkled
B) Yellow round and green wrinkled
C) Red round and yellow wrinkled
D) None

Q.52 **When mendel crossed a red flowered dominant with a white flowered recessive plant of F1 generation were.**
A) All white flowered
B) All red flowered
C)75% white flowered and 25% red flowered plants
D)50% white flowered and 50% red flowered plants

Q.53 **In a dihybrid cross four phenotypes form in the ration of 9:3:3;1 because of.**
A) Dominance of one phenotype in each pair of contrasting traits
B) Independent assortment of the genes of contrasting traits
C)Gene crossing over
D)Mixed effect of dominance and independent assortment

Q.54 **Secretors have dominant secretor gene "Se" on chromosomes**
A) 7
B) II
C) 9
D)19

Q.55 **Basic unit of biological information is**
A) Gene
B) Nucleotide
C) DNA
D) Codon

Q.56 **_____ Starting with a cross between *AA* and *aa*, the proportion of heterozygotes in the F2 progeny will be ___.**
A) 1/8
B) 1/2
C)1/4
D) All heterozygotes

Q.57 **Which of the following is an example of X-linked recessive trait in humans?**
A) Hypophosphatemic rickets
B) Baldness
C) Colour blindness
D) Beard growth

Q.58 **Mendel's law of independent assortment can be demonstrated by**
A) test cross
B) back cross
C) monohybrid cross
D) dihybrid cross

Q.59 **Investigators do a dihybrid cross between two heterozygous and get about a ratio among the offspring. The reason must be due to**
A) polygenes
B) pleiotropic genes
C) linked genes
D) epistatic gene

Q.60 **Whether an allele is dominant or recessive depends on**
A) how common the allele is relative to other alleles
B) whether it is inherited from the mother or the father
C) which chromosome it is on
D) whether it shows expression in heterozygous state or not

Q.61 **All the offspring of a white hen and a black rooster are grey. The simplest explanation for this pattern of inheritance is**
A) linkage
B) sex linkage
C) independent assortment
D) incomplete dominance

Q.62 **A man who has type B blood and a woman who has type A blood could have children of which of the following phenotypes?**
A) A or B only
B) AB only
C) AB or 0 only
D) Al B, AB or 0

Q.63 **When mother's anti-RH negative antibodies seep through placenta into blood circulation of feutus they start_____of RBC of the foeuts**
A) plasmolysis
B) Crenation
C) Haemolysisi
D) deplasmolysis.

Q.64 **All chromosomes other than sex-chromosomes are called**
A) autosome
B) mesosome
C) polysome
D) lysosome.

Q.65 **If a man of M blood group marries a woman of N blood group all their children will have**
A) M blood group
B) N blood group
C) blood group
D) MN bloodgroup

Q.66 **Rh blood group system is encoded by three genes C D and E which occupy-- tightly linked loci A woman wit h albino father marries an albino man.**
A) four
B) three
C) five
D) two

Q.67 **Albinism is a recessive gene. A woman with albino father marries an albino man. The proportion Of her progeny is:**
A) 2 normal: 1 albino
B) all normal
C) all albino go
D) 1 normal:1 albino ,

Q.68 **Phenomena of an allele of one gene suppressing the activity of allele of another gene is called**
A) dominance
B) epistasis
C) suppression
C) inactivation

Q.69 **Blood group in human beings are controlled by**
A) 4 alleles in which A is dominant,.
B) 3 alleles in which A and B are co-dominant and i is recessive
C) 3 alleles in which none is dominant
C) 3 alleles in which A is recessive

Q.70 **Genes located on same locus but having different expressions are**
A) Multiple alleles
C) Oncogenes
C) Polygene
D) contaminants

ANSWERS

1.	C	2.	B	3.	B	4.	A	5.	A	6.	B	7.	C	8.	D
9.	C	10.	D	11.	A	12.	D	13.	B	14.	B	15.	C	16.	D
17.	D	18.	D	19.	B	20.	A	21.	D	22.	D	23.	C	24.	A
25.	D	26.	C	27.	B	28.	A	29.	C	30.	C	31.	B	32.	B
33.	C	34.	A	35.	C	36.	A	37.	A	38.	B	39.	B	40.	C
41.	A	42.	A	43.	D	44.	D	45.	A	46.	C	47.	D	48.	B
49.	C	50.	A	51.	B	52.	B	53.	B	54.		55.	A	56.	B
57.	C	58.	D	59.	C	60.	D	61.	D	62.	D	63.	C	64.	A
65.	D	66.	D	67.	D	68.	B	69.	A	70.		71.		72.	